# PULP & PAPER

MARCH 1957

**Future Manpower Needs**
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**Where's Allied Going?**
*page 50*

**New Book Paper Mill**
*page 52*

"Brainstorming" Session at Crocker-Burbank . . .

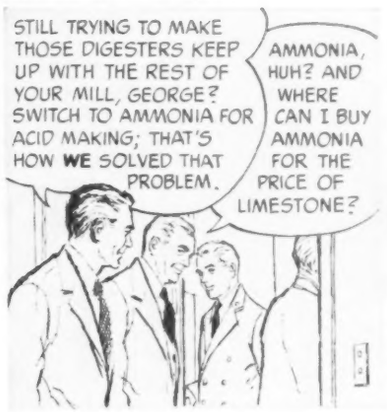
for what came out of it, see page 46

**The A. B. P.* Story**

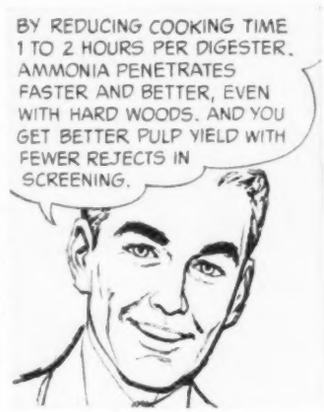
***Ammonium Bisulfite Pulping by Allied Chemical**

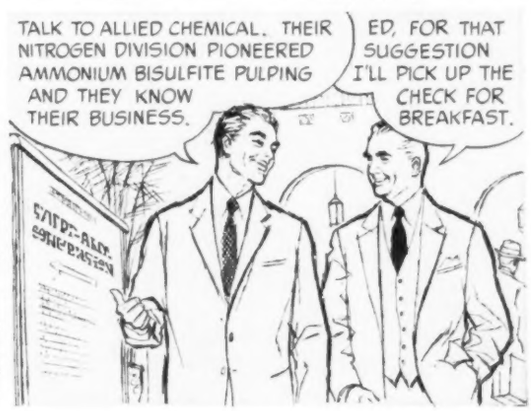
FROM A CHANCE MEETING IN A HOTEL CORRIDOR A MILL EXECUTIVE LEARNS HOW TO INCREASE PULP OUTPUT AND REDUCE MAINTENANCE.

QUITE A COINCIDENCE TO RUN INTO YOU HERE, GEORGE. HOW ARE THINGS?
BUSY, ED. HAD TO MAKE THIS TRIP EVEN THOUGH I SHOULD BE BACK AT THE MILL TRYING TO GET MORE PRODUCTION.


STILL TRYING TO MAKE THOSE DIGESTERS KEEP UP WITH THE REST OF YOUR MILL, GEORGE? SWITCH TO AMMONIA FOR ACID MAKING; THAT'S HOW WE SOLVED THAT PROBLEM.
AMMONIA, HUH? AND WHERE CAN I BUY AMMONIA FOR THE PRICE OF LIMESTONE?

YOU CAN'T. BUT AMMONIA STILL HAS IT ALL OVER LIMESTONE. IN THE FIRST PLACE YOU CAN STEP UP YOUR PRODUCTION MAYBE 25%. WHAT'S THAT WORTH TO YOU, GEORGE?
PLENTY-- BUT HOW?


BY REDUCING COOKING TIME 1 TO 2 HOURS PER DIGESTER. AMMONIA PENETRATES FASTER AND BETTER, EVEN WITH HARD WOODS. AND YOU GET BETTER PULP YIELD WITH FEWER REJECTS IN SCREENING.


TALK TO ALLIED CHEMICAL. THEIR NITROGEN DIVISION PIONEERED AMMONIUM BISULFITE PULPING AND THEY KNOW THEIR BUSINESS.
ED, FOR THAT SUGGESTION I'LL PICK UP THE CHECK FOR BREAKFAST.

# increase pulp production with Allied Ammonia

There must be — and there are — good reasons why many sulfite pulping mills in the U. S. and Canada are now using ammonia for acid making. These mills achieved up to 25% greater production and cut maintenance way down by switching from a calcium base to ammonia. Finally, change-over is simple and inexpensive. Why not get the whole story from an Allied representative?

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Because it's less expensive to purchase — to install — to maintain.

Because it eliminates normal coating difficulties such as orange peel and turkey tracks.

Because it's producing *more, higher quality* coated paper faster than any other coating equipment available today.

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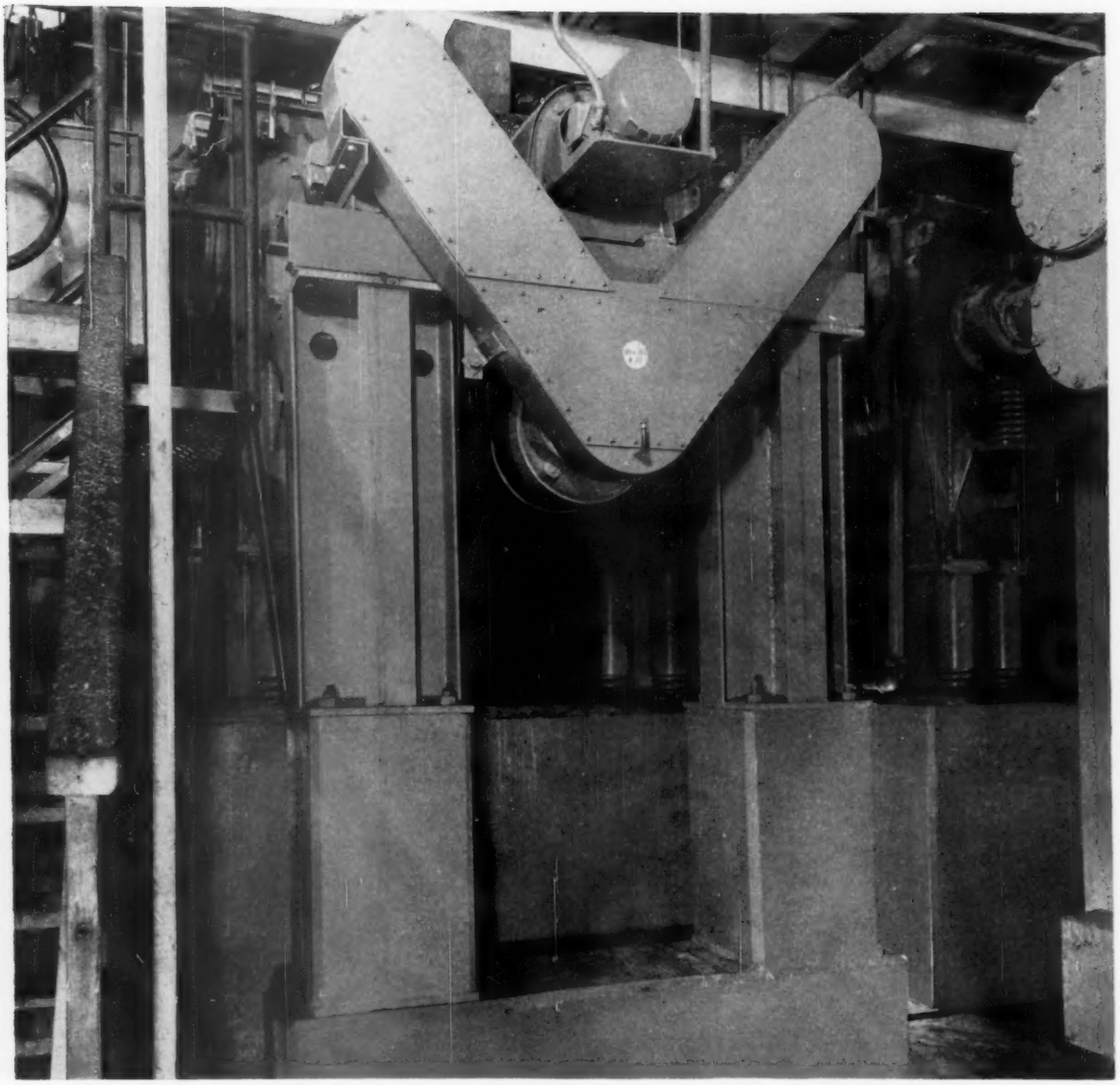

# A lot of PERFORMANCE in a little SPACE

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**MACHINE COMPANY**

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Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

March 1957

PULP & PAPER

VOLUME 31
NUMBER 3

# READER'S GUIDED TOUR

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ABOUT OUR COVER—Brainstorming their way out of production problem at Crocker, Burbank & Co. Assn. are (left to right) BIGELOW CROCKER, JR., DON CROCKER, PAUL DINEEN and ED FERRELL.

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The Editor
PULP & PAPER
1791 Howard Street
Chicago 26, Illinois

# THE EDITOR READS HIS MAIL

## It's Up to Top Execs.

Jacksonville, Fla.

Editor: Your first two editorials in February "Real Heroes of Forest Conservation" and "Prophets of Doom" could well have been given the frontispiece position. Looking back over 38 years of serving private industry, I think of no one phase of forest management as poorly handled as this relationship between industry and the public. Industry has made great strides in their own forest housekeeping but, by not getting this story across to the public, our "Prophets of Doom" always have an eager audience. It will only be through efforts of the "front office," interested executives following the steps of such leaders as John Philip Weyerhaeuser, Jr., that the truth will be presented so that it is understood and accepted. Possible savings are well worth the effort. You are to be complimented on the editorials.

J. E. WOODMAN
Industrial Forester

## Opposes Soil Bank Subsidies

—Washington, D.C.

Editor: We have advised the House Committee on Agriculture that our association is opposed to federal subsidization and that we entertain serious doubts as to the need or advisability of including tree planting as part of the Soil Bank plan. Events of the past year have strengthened our belief that the tree planting aspect of the Soil Bank is undesirable.

Current estimates by the Dept. of Agriculture indicate that five million acres of farm land may be retired to tree cover under the Conservation Reserve part of the Soil Bank program. Cost estimates of such retirement range from $100 to $200 per acre or may total from $500 million to $1 billion. None of this money is returned to the Federal Treasury by any direct refunding requirements. Instead, the landowner not only obtains such dollar benefits, but also retains full title to all timber grown on his land, the value of which in time may equal or exceed these dollar benefits. It is obvious that such an arrangement is grossly unfair to those taxpayers who do not participate in such benefits, particularly the land owners who convert land to tree cover at their own expense.

In this connection it should be emphasized that private forest landowners have increasingly and voluntarily adopted good practices on their lands in recent years at little or no expense to the general taxpayer. For example, there are today more than 9000 certified Tree Farms in 44 states with more than 41 million acres.

It is becoming increasingly evident that the Soil Bank subsidized tree planting program will substantially curtail the desire of the small landowner to plant trees on his land at his own expense, discourage private industry financial and technical help to the small landowner in tree planting, and will react unfavorably on private enterprise in the production of tree seedlings, pulpwood, etc.

LEO V. BODINE
National Lumber Mfrs. Assn.

## Suggests Safety "Ambassador" To Help Smaller Mills

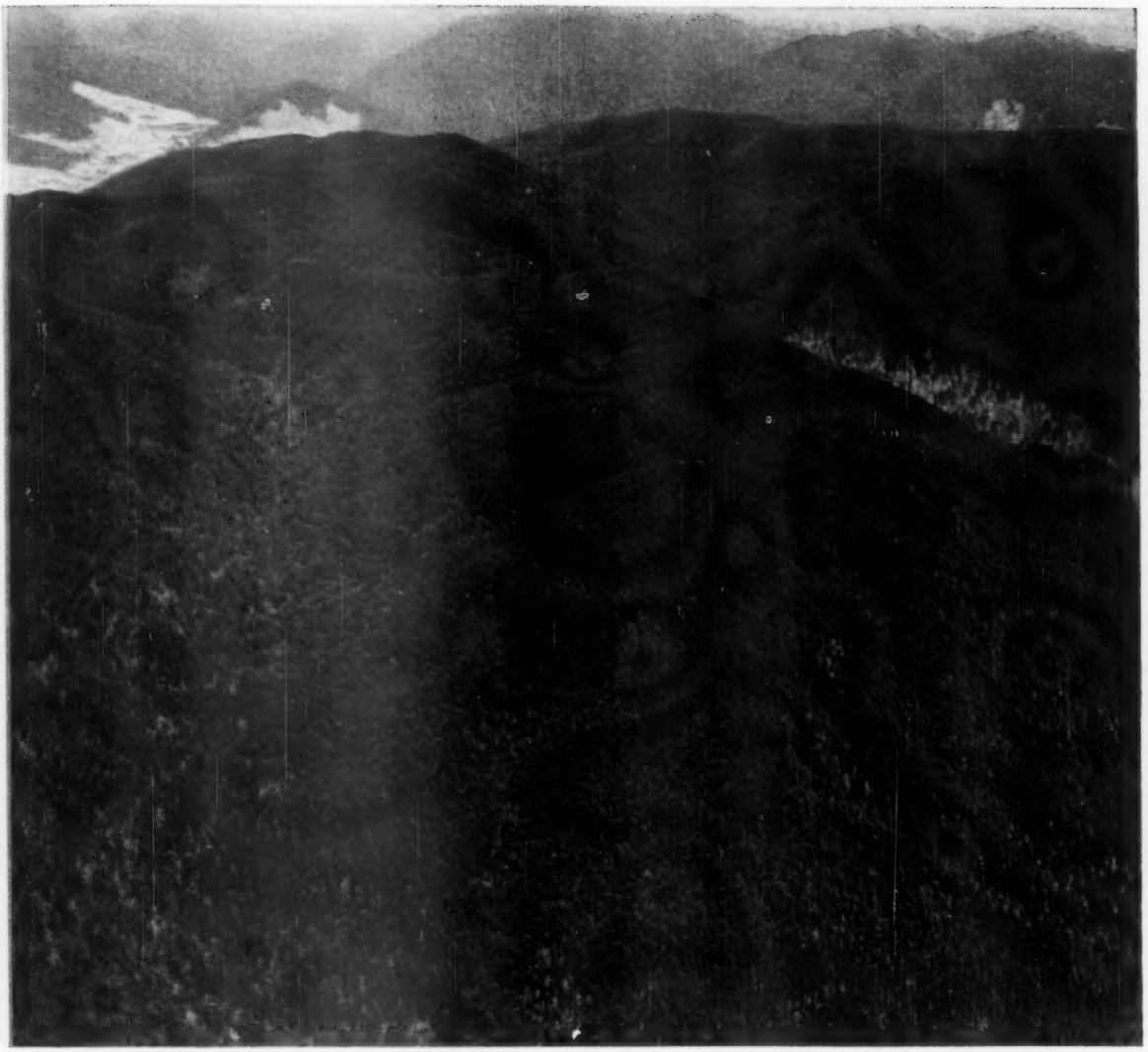
—Chicago

Editor: Your coverage of pulp and paper safety meetings is excellent and a real safety service to the industry. It seems to me that both trade publications and the various associations of the industry can and should do more in the way of providing information and leadership in this vital area of accident prevention.

The smaller paper companies have much higher frequency and severity rates than do the larger plants. Some years ago this matter was studied, and it was found that one major reason for these higher rates was the lack of technical advice on hazards and safety problems. The smaller plants need this assistance, and one way of getting it to them would be through the services of the trade associations.

Other industries have found that a competent safety consultant, acting as a roving ambassador, is a service furnished by trade associations which is welcomed by the membership. Such an individual, well grounded in accident prevention techniques, and constantly in touch with the day-to-day problems, could bring to all plants, large as well as small, the newest and best in pulp and paper mill safety.

GEORGE W. HARPER
Supt., Division of Safety Inspection and education, Illinois State Labor Dept. (formerly with The Mead Corp.)



# *Out of this forest will come a brand new pulp of uniform quality and workability*

Here, in heavily-wooded British Columbia, a huge, new pulp mill is being built. By the end of 1957, it will be turning out 425 tons of bleached Kraft market pulp per day. This new pulp will be of unusual uniformity, quality and workability. And brightnesses of 88-90 will make it usable for the finest papers.

Now under construction at Crofton, British Columbia, this new mill represents a $38,000,000 investment by British Columbia Forest Products Limited. In its operation, sawmill wood chips, logging salvage and pulp logs will be utilized.

We are happy to announce that Mead Pulp Sales, Inc. will be the exclusive distributor of Crofton Kraft. And we are proud to be associated with British Columbia Forest Products Limited, not only for its conservation activities, but also because we sincerely believe this new pulp will provide *uniform* quality and workability characteristics unequalled in the industry.

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***Distributors of Wood Pulp***
Bleached and Unbleached Chemical and Mechanical Wood Pulp
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1504 Sherbrooke Street, West, Montreal Canada

**MEAD** *pulp*

# PULP & PAPER NEWS FROM 'ROUND THE WORLD

## Plans for India . . .

Romesh Chandra, deputy conservator of forests for the indian government in the province of Punjab, who has been studying North American mill and logging methods told a PULP & PAPER editor in Montreal:

"Most of our best coniferous timber, similar to what you have on this continent, grows at higher altitudes—seven to ten thousand feet above sea level," said Mr. Chandra, who believes that some of the methods of log transportation used in Eastern Canada and the U.S. might be applicable, such as the river drive, fluming and wire skidding.

Because of the rising demand for paper products in India, Mr. Chandra, 33-year-old graduate of the Indian Forest College, Dehra Dun, reports plans are under way for a new mill using woods of Himalaya foothills. Also, bagasse is being increasingly used for pulp. He says India's production target for 1961 is 350,000 tons of paper and paper products; output last year was 200,000 tons, nearly double what it was six years previously.

**OPEN LONDON OFFICE . . .** Gottesman Organization has a new British branch, Central National-Gottesman Ltd., Chancery House, 65 Chancery Lane, London, WC 2, for sale of woodpulp in the United Kingdom market. Alfred John Rasor has joined the company as director and head of the London staff. He is well known in British pulp circles after 33 years in the trade, including 10 years with the Board of Trade (Paper Control). Now celebrating its 70th anniversary, the Gottesman Organization is represented in 55 leading world markets for pulp and papers. Other directors of Central National-Gottesman, Ltd., are Samuel Dauman, manager director and first vice pres. of Gottesman and Co. and vice pres. of Central National Corp.; and Ira D. Wallach and Benjamin I. Sheldon, respectively president and vice pres. of both American firms.

**RUSSIAN CELEBRATION . . .** The Russian pulp and paper industry's National Research Institute recently celebrated its 25th anniversary. It has large laboratories in Moscow and Leningrad and is reported to be equipped to use radioactive isotopes and electronic and ultraviolet microscopes. Once faced with putting the Russian paper mills on a scientific basis and creating technical know-how to expand paper and board products, personnel are now said to be the elite among Russian paper experts. The status of fellow is held by 17 staff members, while a score hold doctor of science.

Research program in 1955 listed more than 100 projects. Research at the Institute has outlined the technical base for mass production methods now used in practically all Russian's pulp and paper mills. Production ranges from dissolving pulp to printing papers, board for electric insulation, long-fibered papers, bag paper, filterboard.

Some new developments from the Institute: Moistureproof paper and cardboard, parchments and base stocks for phototracing paper.

**BRITISH IMPORT CONTROLS LIFTED . . .** Now that the United Kingdom has lifted import controls on woodpulp, papers and paperboard, North America will be able to sell more of those commodities in that market, but to what extent no one has been able to estimate.

The change does not affect newsprint shipments. British newsprint consumers are already being issued licenses for all the imports wanted, even though these may originate in the dollar area.

Actually, British buyers of woodpulp may now import from any country in any amount, according to the Board of Trade, London. This is the result of a U.K. commitment to the Organization for European Economic Co-operation.

The present action raises the proportion to about 93% and North America benefits because the United Kingdom did not wish to re-impose dollar restrictions—and thereby give Scandinavian soft-currency countries a preferred position.

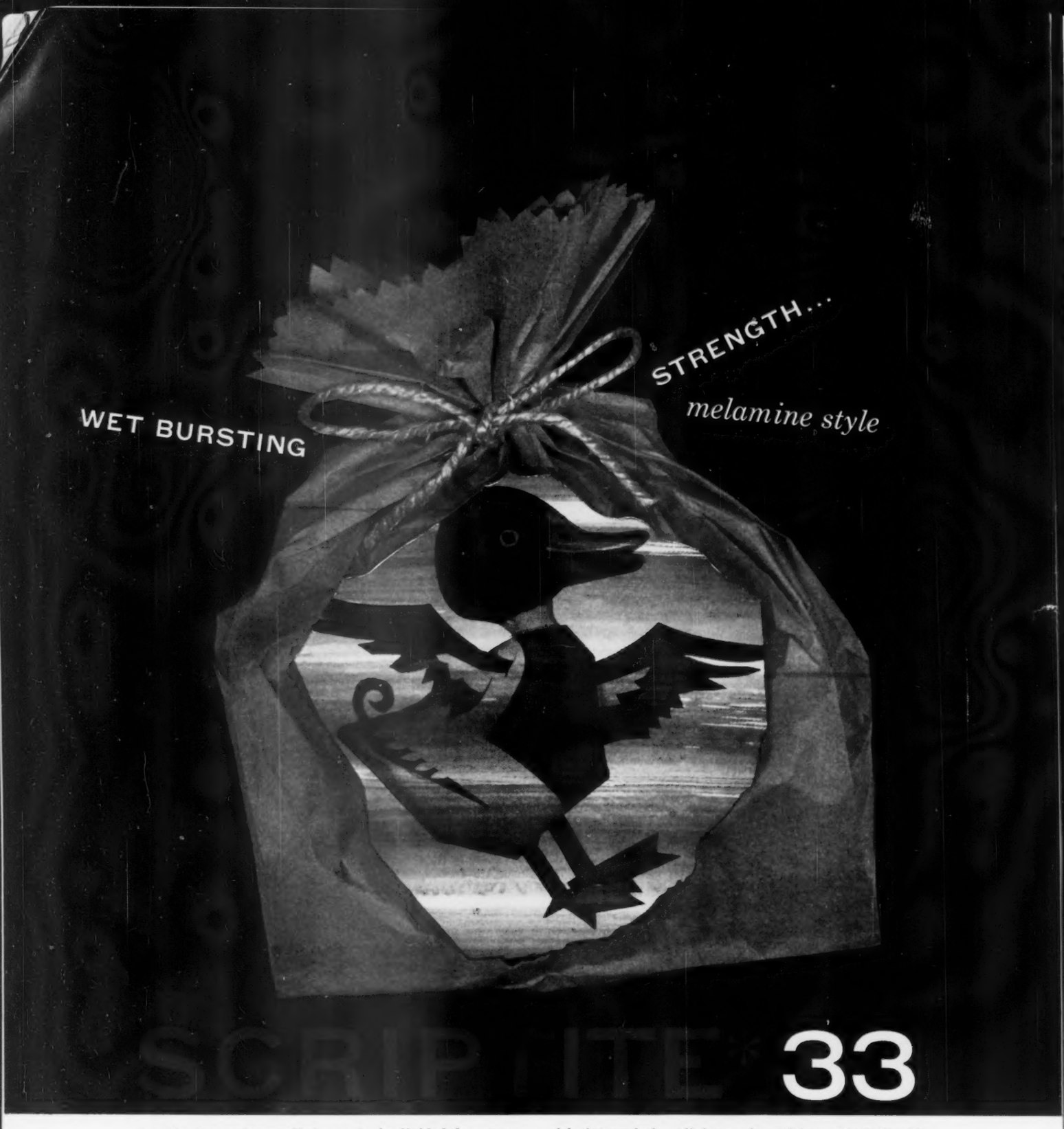
## SCOTLAND—Production Up

Total paper and paperboard production in Scotland:

1955—438,000 short tons.
1954—421,230 short tons.
1953—363,728 short tons.

The Digest of Scottish Statistics also says 16,600 persons were employed in Scottish mills in June 1955, compared with 15,000 in June, 1953.

**MODERNIZES FOR BAG AND BOARD PRODUCTION.** La Papelera Española, biggest paper company in Spain, in cooperation with St. Regis Paper Co., is modernizing its production plants to increase output of bags for industrial packing (cement, flour, sugar, etc.) and of corrugated board boxes for shipping fruit, etc. Here is view of Renteria (Cupuzcoa) mill of La Papelera Española.




A melamine resin supplied as a finely divided dry powder, Scriptite 33 is a ready source of unusually high wet strength for many paper products. And this is strength that won't appreciably weaken even under excessively moist conditions over a long period of time.

Count on Scriptite 33 to increase dry tensile strength and wet rub resistance . . . to improve dry Mullen, wax pick, internal size efficiency, dry stiffness. Scriptite 33 produces papers with strong fold endurance.

Call on the Monsanto Paper Resins Department for experienced assistance in formulating and testing. For laboratory samples of Scriptite 33 and technical bulletin, write Monsanto Chemical Company, Plastics Division, Room 1897, Springfield 2, Mass.

*SCRIPTITE: REG. U. S. PAT. OFF.

MONSANTO

*The Monsanto Line of Paper Resins also includes*

**SCRIPTITE 40** . . . *a urea type wet-strength resin.*

**SCRIPTITE 50** . . . *for unsurpassed printability and improved surface characteristics on boxboard.*

**SCRIPTITE 52** . . . *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner.*

**SCRIPTITE 54** . . . *for outstanding water resistance and both wet and dry rub resistance.*

WEYERHAEUSER-KIECKHEFER-EDDY MERGER PLAN IS BIG NEWS. . . . One of biggest events of this new year is this merger now under way. It aims to put Weyerhaeuser into the consumer paperboard business in a big way. Officials of these companies were busy working out details as this issue went to press. Weyerhaeuser would acquire North Carolina Pulp Co., making bleached, unbleached and semi-chemical pulp, and board on three Fourdriniers (about 700 tons/day); three other board mills and 25 converting plants. The board mill in Delair, N.J., has two Fourdriniers (280 tons/day), one in White Pigeon, Mich., two cylinder machines (200 tons/day), and a mill now idle in Three Rivers, Mich. Some of same persons own Kieckhefer and Eddy stock, will vote on share exchange deal.

GIRDING FOR THE HARD SELL may be behind International Paper Co's. new realignment of sales force. Newly created post of manager of marketing is backed up by four product managerships; also men to supervise sales promotion, sales engineering and development. Changes are in IP's fine paper and bleached board division.

A BIG YEAR IN PULP & PAPER EXPORTS is expected in 1957 although many countries are booming their own plants. However, as industrialization progresses, production will have a hard time keeping pace with demand, judging from many instances. Expanding world demand for U.S. pulp and paper markets in a select list of 20 countries should rise from $180,000,000 to around $200,000,000 in the immediate future, predicts Eric Lagerloef, secretary of APPA's export committee. "It may even reach it this year," he says.

MORE FAMILIES COMING UP. . . . Forecasts indicate that within 20 years there will be 18,500,000 more new households, needing more paper products. Families are larger today than during past 20 years.

PAPER INDUSTRY OUTLOOK GOOD . . . said trade association executives and other industry leaders, in annual survey conducted by American Paper Merchant. Dernell Every, secretary, Kraft Paper Assn., predicted normal population growth plus research aiming to broaden uses for kraft paper will create enough additional business to permit the enlarged industry to maintain a continuing high rate of operations. John Richey, executive secretary, Paper and Twine Assn., expects heavier defense expenditures and foreign aid to raise business volume higher than anticipated, but added that profits may be limited because of international situation.

RIEGEL CAROLINA TO USE UNIQUE STOCK PREP SYSTEM. . . . A new concept in stock preparation designed by Black-Clawson will be used in the Riegel Paper Corp. paper mill at Acme, scheduled for operation next year. All equipment will be made of 316 stainless steel or stainless steel fitted, expected to give longer life, be more acid resistant and be cleaner than other types.

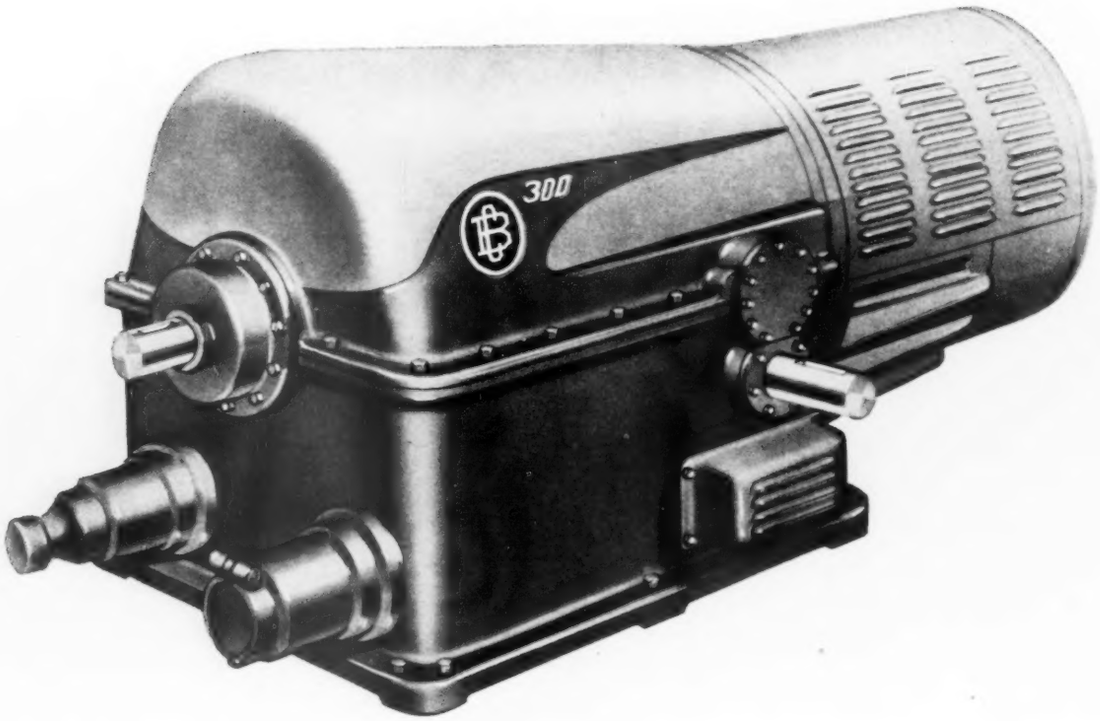
NEW CONVERTING PLANTS. . . . Chemical Packaging Co. of Savannah, Ga., will build a $100,000 bag-manufacturing plant at Louisville, Ky., to produce heavy multi-wall paper bags.

MURPHY CONTINUES PLANS FOR ARKANSAS MILL. . . . Murphy Corp. has purchased 54,000 acres of Arkansas timberland for $3,699,000 to back up plans for a paper mill in that state. Construction plans are still in the air — mill may be at either El Dorado or Pine Bluff.

BOWATERS MAKES SOME HISTORY. . . . Bowaters Southern at Calhoun, Tenn., established a record for making salable paper on its No. 3 machine, they believe. First paper was run across dryers a little after 6 a.m. and a salable roll of newsprint rolled off the machine less than four hours later.

Please turn page for more

# the first
# *hydraulically-regulated* differential gear drive




**After years of intensive research, development and testing, Black-Clawson has developed a superior paper machine drive that provides:**

Precise synchronous speed regulation

Accurate draw adjustment

**These important operating characteristics are obtained through a unique hydraulic-motor differential-cage drive and a hydraulic tachometer-motor-feedback-control arrangement.**

**Other significant operating features of the new Black-Clawson drive are:**

Machine sections can be inched *or reversed* with line shaft running or *dead.*

No helper motors or inching motors required—no belts or chain drives are used.

**Durability, ease of control and flexibility never before available are built into this compact differential gear drive unit.**

Write for descriptive bulletin 10-PMB which gives the full story on design and operating characteristics.

## *The Black-Clawson Company*

**Paper Machine Division • Watertown, N. Y.**

**In Canada: Black-Clawson (Canada) Ltd., Montreal, P. Q.**

BUSINESS OUTLOOK—GENERALLY FAIR. . . . That's the way the Chicago Tribune sized up 1957 in its annual business review and forecast. It said: Consumer income and spending will move upward. Construction will top 1956. The automobile industry is headed for a better year. Steel will set a new record high. Money will remain tight—interest rates high. A few soft spots—home building, certain retail merchandising tied to residential construction.

RISING COSTS AND STAGNANT PROFITS. . . . The new president of NAM, Ernest G. Swigert, president of Hyster Co., Portland, Ore., says the business outlook for late 1957 is clouded by rising production costs and lower earnings prospects. Taxes and dividends have gone up 14%, but earnings retained in business have gone down 28%. Personal incomes increased 6 1/2% in 1956, gross national product rose 5 1/2%, corporate sales went up 4.2%, but profits for all corporations rose only from $19.4 to $19.5 billion.

OUTLOOK FOR GRAPHIC ARTS INDUSTRY. . . . Advertising growth, color growth, longer printing runs, more productive equipment to keep pace with increased wages and prices—these factors point to a higher volume and greater efficiency in graphic arts this year, says George S. Dively, chairman and president of Harris-Seybold Co. There may be a test of business strength in midyear, he said, urging that businessmen exercise good judgment and restraint in keeping inventories in line.

WHY INDUSTRY HAS EYES ON CALIFORNIA. . . . That state now ranks second to Oregon in lumber production, and is third state in plywood production, but only 23rd in woodpulp. Six mills make woodpulp but have capacity only for 521 tons a day. Unused mill and logging residues available annually for woodpulp total 341,500,000 cu. ft. or 4,260,000 cords—enough to support 6,000 tons of daily woodpulp capacity. Besides, there are considerable hardwoods and non-commercial timber and some 800,000 tons a year of waste paper and rag resources.

WILL EXPAND 26% IN FIVE TO SEVEN YEARS. . . . That's the Crown Zellerbach program, and a $60,000,000 25-year 4 1/8% loan has been arranged to help it along. It will be in bags, printing paper, household products and specialties primarily. It will increase company capacity by 425,000 tons.

A NEW LABORATORY. . . . St. Regis Paper Co. has begun construction of a new pulp and paper laboratory at its mill at Pensacola, Fla. The laboratory, which will cost approximately $330,000, will house the company's plant engineering staff.

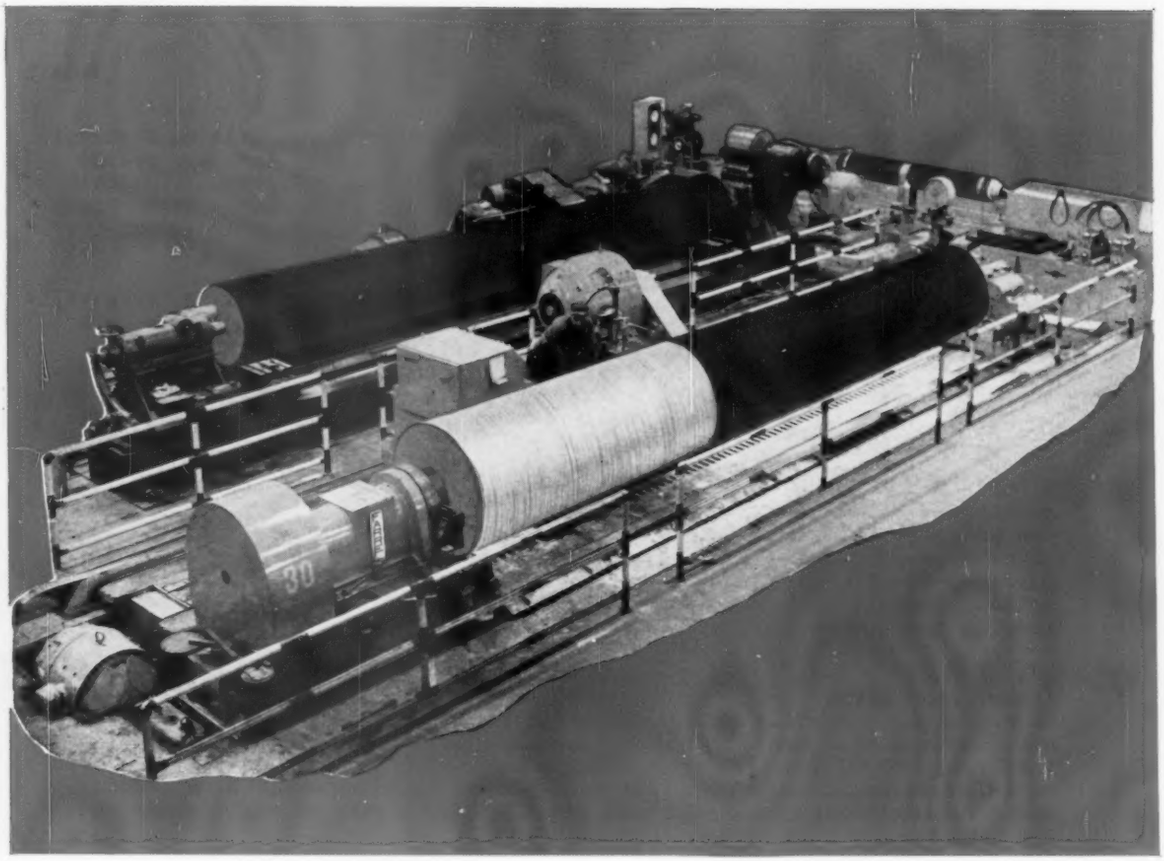
END OF YEAR TARGET FOR I. P. MILL. . . . International Paper Co. announces that its new newsprint and bleached board mill in Pine Bluff, Ark., will be completed by late 1957. The mill will cost $57 million. The newsprint machine will have an annual capacity of 130,000 tons and the bleached kraft board machine an annual capacity of 165,000 tons per year.

WEYERHAEUSER PLANS SOUTHERN MILL. . . . Weyerhaeuser Timber Co. announced plans to build a $30 million paper mill in the Columbus, Miss., area. "We will build as soon as economic conditions permit," said C. Davis Weyerhaeuser, departmental mgr. at Columbus. The plant site is 410 acres on the banks of the Tombigbee River. The company recently purchased 50,000 acres of reforestation lands in the vicinity, is holding options on 40,000 more, as reported in February issue of PULP & PAPER.

PORTLAND MAY GET PULP MILL. . . . It is rumored that a pulp mill will be built in Portland, Ore. At press time no more definite information was available.

Please turn page for more

ROLL COVERINGS



# **What it takes** to make precision-perfect roll coverings

It takes the technical skill of rubber chemists and production personnel with years and years of creative experience . . . it takes the most modern, most complete equipment—tools such as these huge grinders and dynamic balancer pictured above . . . it takes a plant location convenient to major highways and railroads . . . it takes a staff of sales engineers with a comprehensive knowledge of your problems, your needs.

It takes, in short, the many advanced technological, production, and service facilities available to paper mills who specify roll coverings by "U. S."—United States Rubber, who quality control the rubber through every stage of development right to your own paper machine.

Contact a roll covering specialist. Get in touch with us at Rockefeller Center, New York 20, N. Y.

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Mechanical Goods Division

**United States Rubber**

NO NEWSPRINT PRICE PROBE PLANNED. . . . According to Minister of Justice Stuart Garson of the Canadian House of Commons, "In a time of rising costs and strong demands, increases may be explained on the basis of ordinary market behavior and are not in themselves evidence of collusion." He said that the Restrictive Trade Practices Commission had received no request from Washington for a joint U.S.-Canadian government inquiry.

NEW CONSTRUCTION FOR FIBREBOARD. . . . G. L. Langtry, gen. mgr. of Fibreboard's Northern Packaging Div., announced a long range expansion program at Fibreboard Paper Products Corp.'s Sumner, Wash. plant will begin this winter. First step will be erection of an 84,000 sq. ft. tilt-up concrete building to house corrugator and other container producing and warehousing facilities. A railroad spur and truck dock facilities will be built into the structure.

TREND TO MORE PACKAGE SIZES WILL CONTINUE. . . . Larger families, the "do-it-yourself" boom and consumers' desire for extra conveniences are the reasons, according to John C. Newell Jr., marketing director of the Folding Paper Box Assn. "Marketing one package size is now as obsolete as offering only one shade of lipstick," he said.

ST. REGIS EXPANDS MINNESOTA MILL. . . . $4,000,000 expansion and modernization program for Fine Paper Div. mill, Sartell, Minn., due to be completed in 1958. Rebuilding the No. 1 paper machine will add 50 tons/day to present production of 125 tons. A new 90,000 lb. steam generating unit, a second super calender and a kraft refining system will be installed. New office building constructed. Alterations will be made at pulp mill and bleaching plant.

BRITISH COLUMBIA MAY GET NEW PULP MILL. . . . Ray Williston, B.C. lands minister, says that a Fort St. John group, in partnership with U.S. interests, has been negotiating for a site at Taylor in Peace River valley. Mr. Williston said that a multi-million-dollar mill would utilize spruce and balsam pulpwood. Power would be provided by planned hydro-electric development in the area. A veteran in the industry remarked that this is something to watch.

KITIMAT MILL PROJECT STILL ALIVE. . . . Pres. M. J. Foley, Powell River Co., said that a mill will be built at Kitimat, B.C., eventually, even though the firm has acquired control of Brooks Scanlon Lumber Co. and will also build a pulp mill near Bend, Ore.

ACCELERATED AMORTIZATION FOR STREAM POLLUTION COSTS. . . . U.S. Congressman Lipscomb (R., Calif.) has introduced H.R. 2463 (referred to the ways and means committee) which would seek to encourage the prevention of air and water pollution by allowing the cost of treatment works to be amortized at an accelerated rate for income tax purposes.

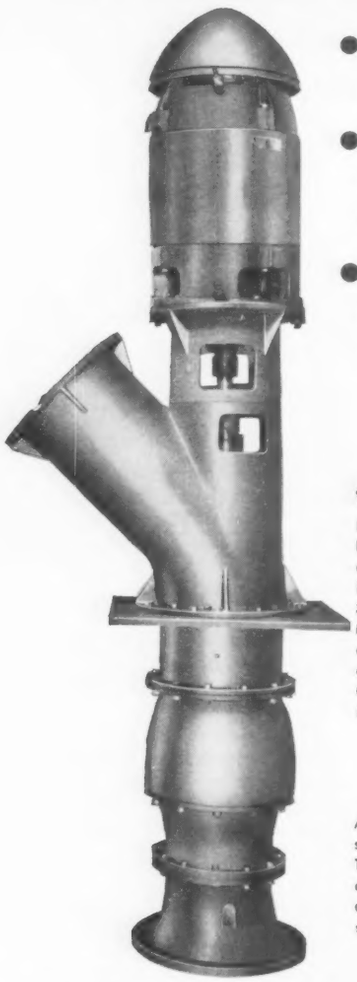
MONTANA MILL WON'T SPOIL THE FISHING. . . . Nels Sandberg, exec. vice pres., Waldorf Paper Products Co., said "the only product that will go back into the river is water from the condensers," in describing kraft noodle pulp mill now being built on Clark Fork River west of Missoula. Dr. Paul Trout, chief chemist for the Waldorf firm, said the mill will use chips purchased from lumber operators in western Montana, providing a market for lumber byproducts ordinarily considered waste (Story in this issue).

CAUSE OF PAPERBOARD SLUMP UNDETERMINED. . . . According to a published report in the Appleton Post-Crescent, a Fox Cities paperboard producer said it was due to slight overproduction. One Fox Cities converter called the slump seasonal. Neither he nor the producer would strike a gloomy attitude. One explicitly predicted a very bright outlook.

Please turn page for more

# Bingham "EVEN-FLO" PUMP

## DISCHARGES WITH NON-PULSATING FLOW REGARDLESS OF VARIATION IN SUPPLY!



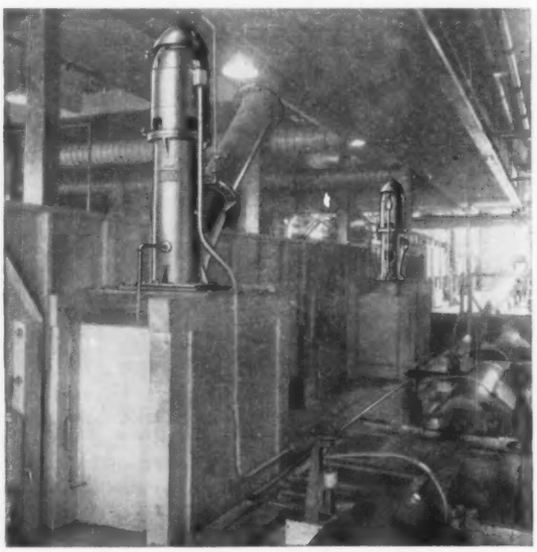
- **Cannot Become Airbound!**
- **Operates in Small Sumps with Little or No Submergence**
- **Maintains Constant Liquid Level in Sump with Varying Supply**

The BINGHAM "Even-Flo" Pump discharges pumpage with an even, non-pulsating flow, regardless of whether it is pumping at full or fraction of capacity. The *evenness* of discharge is not affected by surges in supply to pump sump. Maintains constant liquid level in the pump sump, regardless of variation in incoming supply.

The "Even-Flo" pump also handles liquids containing entrained air at the same uninterrupted, even rate of flow, without becoming airbound.

Available for any capacity. Call your nearest Bingham office for full information, or write for Bulletin 36.

Bingham "Even-Flo" Pumps are being used effectively in the Pulp and Paper industry for such services as: *Primary and Secondary Screen Transfer • Seal Pits for Barometric Legs • White Water and Stock Chests • Mill Sewage and Waste Liquor Sumps • Sludge Collecting Chests • Acid Sumps • Fan Pumps • Washers • Save-Alls*



A battery of "Even-Flo" Pumps installed for screen transfer service. The non-pulsating, even rate of discharge, which is a characteristic of these pumps, increases flat screen production as much as 30%.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

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VANCOUVER, B. C., CAN.

ANOTHER BOOM YEAR FOR INDUSTRY. . . . Some 600 industrial advertising and sales managers, agency heads and business paper sales managers who took part in Industrial Marketing's annual survey said that business looks good for 1957. And the records indicate that these men's predictions are usually right.

ALLIS-CHALMERS EXPECTS RECORD SALES IN '57. . . . Robert S. Stevenson, president, said that the backlog of orders for large electrical and industrial equipment is 40% higher than it was a year ago. "The outlook for all six of our operating divisions is bright," he added.

HOW SMALL CAN A PULP MILL BE? . . . Sen. Richard L. Neuberger has requested the U.S. Forest Service to study the minimum size pulp mill which can use scrub timber and be an economically successful operation. He said that growth of Oregon's pulp industry has been impeded by large capital required to construct present mills.

OREGON STATE INCREASES PULP AND PAPER PROGRAM. . . . Dr. E. F. Kurth, professor of forest products chemistry, is in charge of program to increase research and teaching of pulp and paper chemistry at Oregon State College, Corvallis. Several fellowships and scholarships reportedly have been financed by the industry.

KIMBERLY-CLARK CONSTRUCTS CONNECTICUT MILL. . . . Kimberly-Clark Corp. has started construction of a new creped wadding mill and converting plant at New Milford, Conn. Operations are expected to start early in 1958 at the 100-acre site on the Housatonic River. It will be similar in design to the new K-C mill now operating at Fullerton, Calif.

ENGINEERS, BUILDERS EXPECT TO KEEP BUSY. . . . Leading engineers and builders of industrial plant facilities look for high levels of industrial construction to continue through 1957. C. D. Haxby, National Constructors Assn. president, said existing backlogs plus contracts under negotiation assure a good volume of new construction. He minimized the effect to date of tight money situation.

ST. REGIS TO SUPPLY MONSANTO-EMERY PLANT. . . . Monsanto Chemical Co. and Emery Industries, Inc. have joined in manufacture of chemicals from crude tall oil from St. Regis mills in Florida. A $4,000,000 plant for fractionating crude tall oil into unsaturated fatty acids and tall oil rosin will be completed in 1958 at Monsanto's Nitro, W. Va., location. The plan includes barging tall oil from St. Regis mills in Jacksonville and Pensacola and aims to insure Monsanto against any future rosin scarcities for Mersize. Emery Industries uses fatty acids to make polybasic acids for surface coatings, plastic formulations, etc.

HAMMERMILL, RAYONIER DROP MERGER TALKS. . . . Proposed merger talks between Hammermill Paper Co. and Rayonier, Inc., have been dropped.

BUYS OREGON FIRM. . . . Weyerhaeuser Timber Co. has acquired W. A. Woodard Lumber Co., Cottage Grove, Ore., 20 miles south of Weyerhaeuser's Springfield branch. The transaction included 55,000 acres of timberland — mostly previously logged — to be added to Weyerhaeuser's Calapooya Tree Farm, plus logging equipment, sawmill and plywood plant.

BOARD MILL FOR SALE. . . . The Wilbraham Paper Corp., North Wilbraham, Mass., is for sale. Fully equipped, the mill has a 50 ton daily capacity with additional facilities for rag processing and paper de-inking. Contact Charles C. Rossotti, Rosotti Lithograph Corp., North Bergen, N.J.

# MULTIPLE EFFECT SAVINGS

Damascus Welded Stainless Steel Tubing can give you:

- Longer tube life
- Less down-time
- Economical operation
- Higher production quality

Truly a multiple effect savings for your multiple effect evaporators.

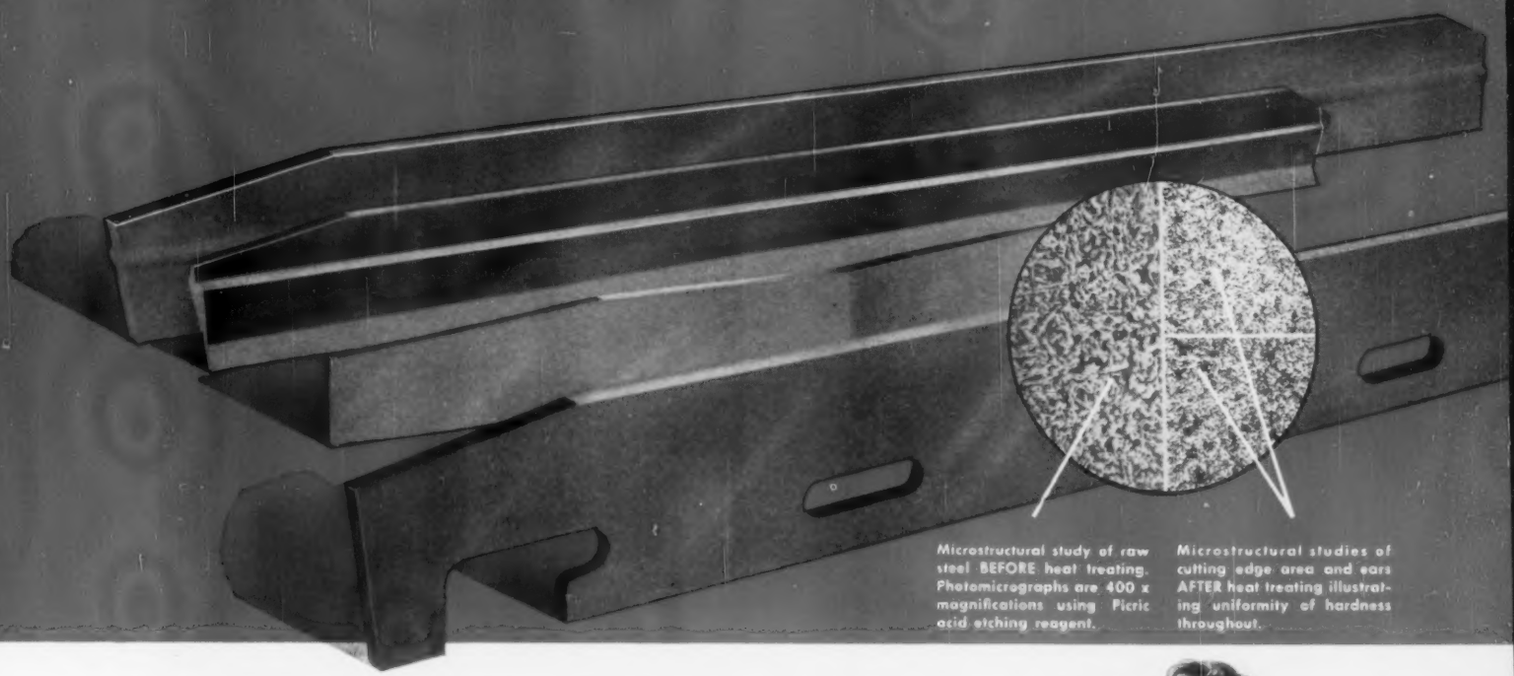
When corrosion resistance and dimensional accuracy are demanded, and quality, service and delivery are important, Damascus Stainless Steel Tubing is your best buy.

DAMASCUS TUBE COMPANY

STAINLESS STEEL TUBING AND PIPE

GREENVILLE, PENNSYLVANIA

# WHY *Microlyzed** JORDAN FILLINGS ARE NOTED FOR ENDURANCE



Microstructural study of raw steel BEFORE heat treating. Photomicrographs are 400 x magnifications using Picric acid etching reagent.

Microstructural studies of cutting edge area and ears AFTER heat treating illustrating uniformity of hardness throughout.

*Regardless of the stock, consistency or pressure, MICROLYZED Fillings by BOLTON lead in providing what papermakers want most in Jordan Fillings . . .*

**LONG WEAR** *because they are custom-processed from specified Jordan steel to a precise balance of hardness and toughness.*

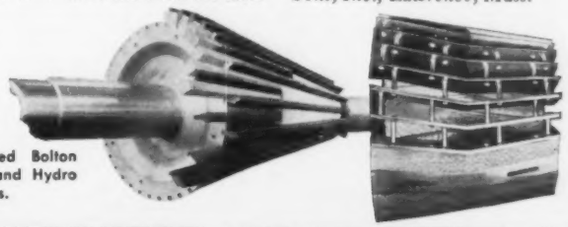
**EVEN WEAR OF PLUG AND SHELL KNIVES** *because of guaranteed uniformity of hardness in each set of fillings and throughout each knife in the set.*

In the manufacture of Jordan Fillings, Bolton controls the entire process. Starting in the laboratory, a photomicrostructural analysis is made of each shipment of Jordan steel. Destructive mechanical properties tests are made, which must fall within the rigid tolerance standards established. During production, nondestructive tests assure the desired properties previously determined are achieved during heat treatment.

Furnace temperatures are controlled to within tolerances of 5 degrees. Hardening is done in a BOLTON-designed quench in which each knife is clamped to maintain straightness. This exclusive method eliminates the need for later straightening. Papermakers receive the benefits of a stress-free product.

Knowing that performance is a reflection of the materials used and the degree of skill and care shown in fabrication, no compromise is permitted at BOLTON.

Fifty two years of specialized Jordan Fillings experience is built in to every knife. So is the craftsmen's attitude — an attitude of conviction that none will deliver longer, more economical, day in day out resistance to wear than BOLTON MICROLYZED FILLINGS . . . RING TYPE — WEDGELESS — HYDRO-TRUSS. *All are made by John W. Bolton & Sons, Inc., Lawrence, Mass.*



Partially assembled Bolton Wedgeless Plug and Hydro Truss Shell Fillings.

**The Papermaker suggests:**

Write today for Bulletin No. F-556 on Bolton Microlyzed Fillings. It has full information on:

- *Wedgeless Plug Fillings*
- *Hydro-Truss Shell Fillings*
- *Ring Type Fillings*
- *Special Heat-Treated Steel*
- *Bolton Stainless Steel*
- *Bolton Phosphor Bronze and other alloys*
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- *Knife Sizes*
- *Stainless Steel Plug Jackets*
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*Filling the Needs of Papermakers:* JORDANS • CLAFLINS • FILLINGS • PLUGS • STAINLESS PLUG JACKETS • BEATER BARS AND BED PLATES • SHOWER PIPES • SUCTION BOX COVERS • MAGNETIC EQUIPMENT • MACHINE KNIVES.

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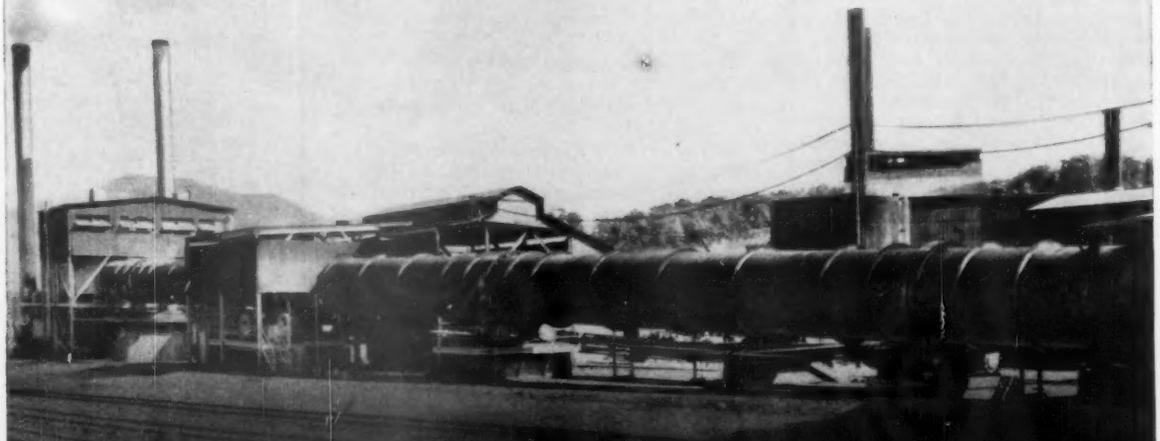
Shown below is the second Smidth Rotary Kiln for reburning lime sludge at the Canton, North Carolina, plant of the Champion Paper & Fiber Co.



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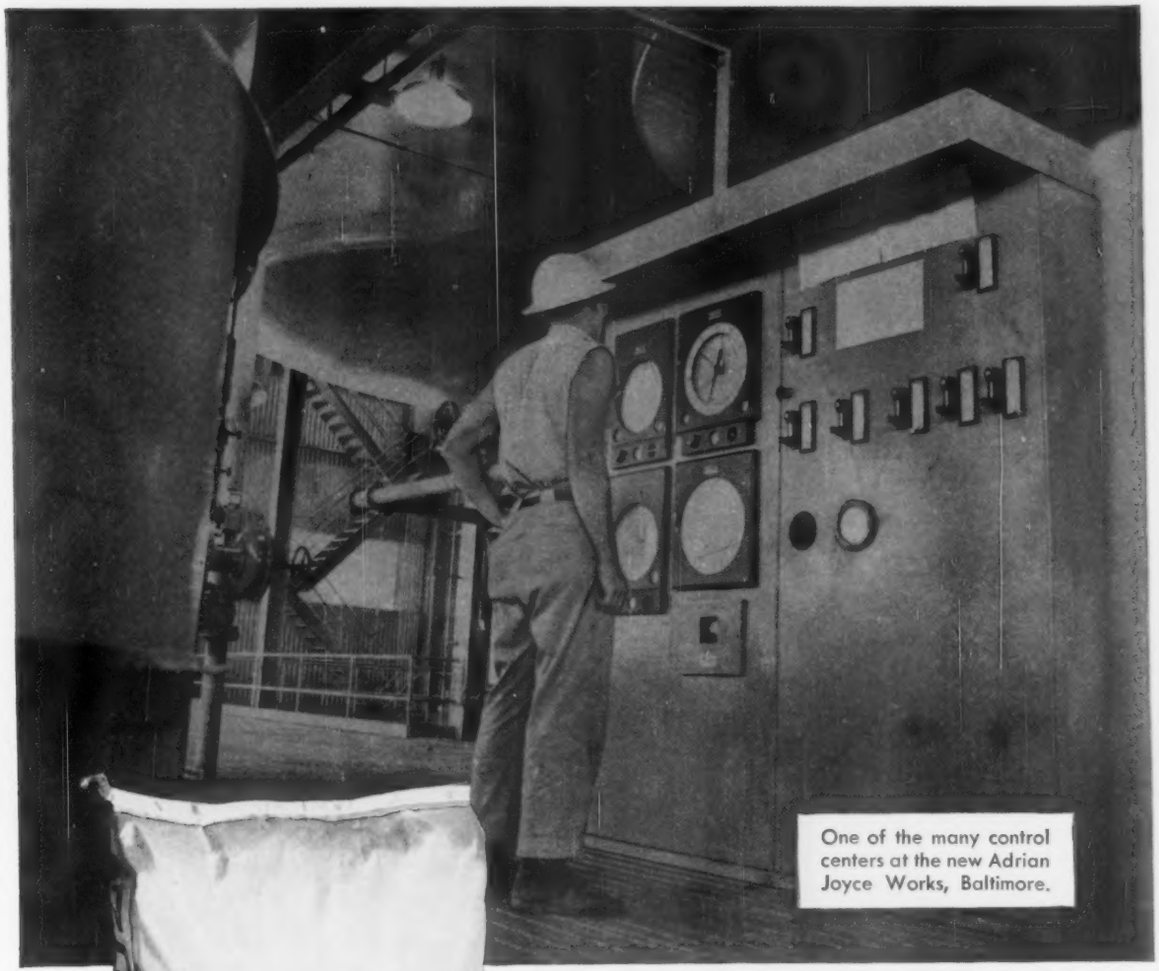

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## TITANIUM DIOXIDE

***. . . the whitest white pigment available!***

You can count on Glidden to supply your complete titanium dioxide requirements. Our new Adrian Joyce Works at Baltimore more than doubles the available supply of *Zopaque* Titanium Dioxide. Further plant expansions are now being made to help meet your growing needs in the years to come!

***Zopaque gives you these advantages:***

- Highly accelerated dispersion rate.
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. . . is provided by TITANOX* white pigments! Eye-appealing papers start with TITANOX white pigments in which the inherent whiteness, brightness and opacity of $TiO_2$ are developed to the fullest extent.

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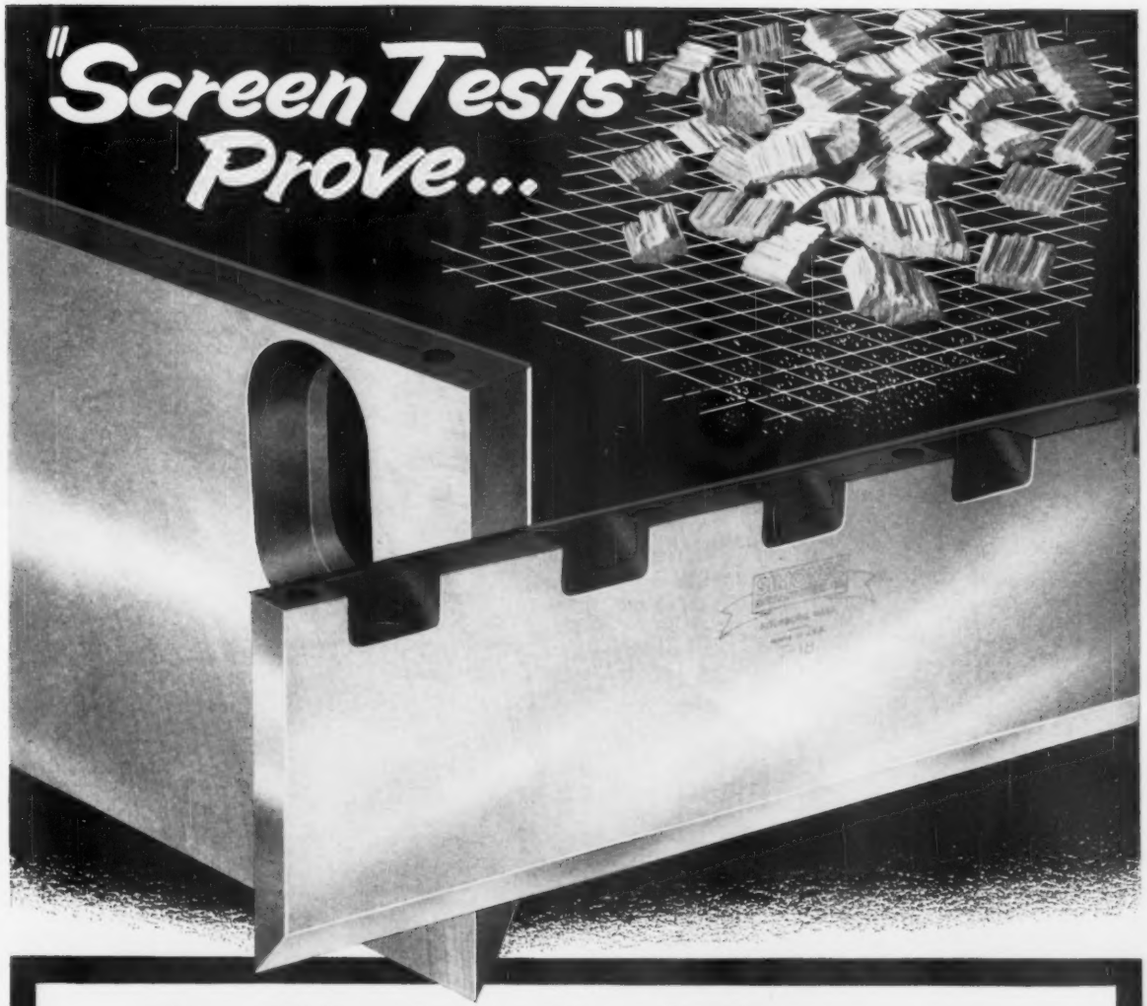


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More usable chips with less dust through the screens means a lower percentage of waste, greater chip yield and more efficient woodroom operation.

You get this with Simonds T-18 Steel Knives because they are extra tough, take high speeds and heavy cuts, have extra resistance to dulling which causes bruised chips and excess dust.

Put Simonds T-18 Knives on the job and *your* screen tests will show more and better chips, less dust, LOWER COST CUTTING.

*125 years of growth 1832-1957*

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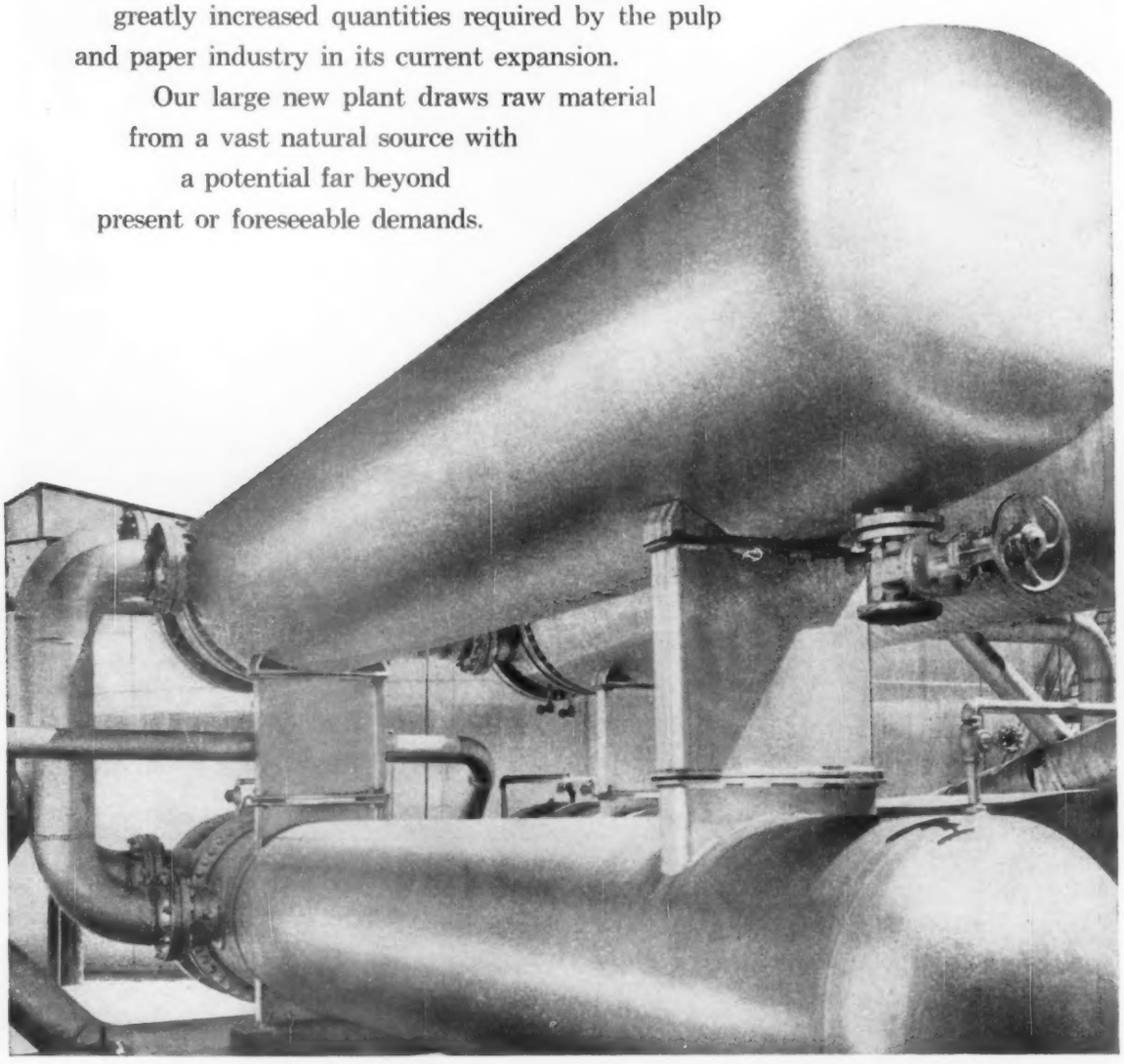
## SALT CAKE is a primary West End product and we have the production capacity to meet your needs

At West End, salt cake is a prime product . . . not a by-product . . . and is being produced in the greatly increased quantities required by the pulp and paper industry in its current expansion.

Our large new plant draws raw material from a vast natural source with a potential far beyond present or foreseeable demands.



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**OK BATTLE AXE CHIPPER KNIVES.**

**They always deliver maximum production of uniform, cookable chips with an absolute minimum of costly splinters, slivers and dust.**

**"OK BATTLE AXE"** Chipper Knives are made of special high alloy steel, hardened evenly in electrically-controlled furnaces, then carefully tempered, ground and honed. The result is a dependable, durable blade with an extra-keen edge that gives you long, economical runs between regrindings, while improving overall chip quality. "OK BATTLE AXE" knives stubbornly resist cracking or shelling, even under high impact loads.

**"OK BATTLE AXE"** Chipper Knives are made to fit all paper mill and sawmill chippers. Many sizes stocked in Cincinnati, Ohio, and Portland, Oregon, . . . or order to your specifications. Complete records are kept to assure exact duplication of original orders without delay. Ohio Knife Co. field service men, experienced in chipping operations, can be sent to your mill to analyze your particular chipping problems and recommend correct tempers, bevels, etc. to best suit the job. No obligation, of course.

For complete information on "OK BATTLE AXE" Chipper Knives, write Dept. 52— F.

**THE OHIO KNIFE CO.**

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MANUFACTURERS OF OK HOG KNIVES, VENEER KNIVES, CHIPPER KNIVES, PLANER KNIVES.

# C-132 chain resists shock, abuse in woodyard service

## "File-hard" Promal chain built to combat abrasive wear

The grueling day-in, day-out punishment of pulpwood conveying requires the added strength and greater wear resistance offered by Link-Belt's "file-hard" Promal C-132 chain. It's specifically designed to stand up under impact and abrasive abuse.

The "file-hard" surface of this durable Link-Belt chain helps minimize conveyor shutdowns, replacement and maintenance costs. In addition, the structural uniformity of Promal —its high yield point and ultimate strength—provides resistance against distortion.

This rugged combination chain consists of Promal cast center links and steel sidebars connected by steel pins which are locked against rotation. Its broad top and bottom surfaces resist sliding wear. And Link-Belt's many attachments adapt this chain to specific conveying applications.

## Special hardening available for highly abrasive conditions

**SPECIAL HARDENING** protects chain and attachments from abrasive wear under severe conditions like those shown above

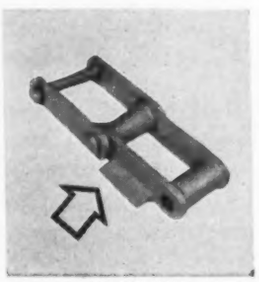
Newly developed specially hardened Link-Belt chains and attachments have proved that there's no need to go to more costly cast alloy steel chains for highly abrasive service. See your Link-Belt representative or authorized stock carrying distributor for specific information. He will gladly show you where special hardening fits your requirements.

**K-9 ATTACHMENTS** on Link-Belt C-132 combination chain absorb impact from pulpwood logs, extending conveyor life.

## K-9 attachment extends wear-life of C-132 chain

Broad sliding surface of K-9 attachments protects Link-Belt C-132 combination chain against impact from falling logs. Sturdy wear shoe (right) absorbs shock and transfers it to track, minimizing stress on chain joints.

Popular for both conveying and elevating, C-132 chain combines cast center links with steel sidebars connected by steel pins . . . offers high strength and full bearing area. Broad tops and bottoms provide long sliding surfaces for drag conveyors.



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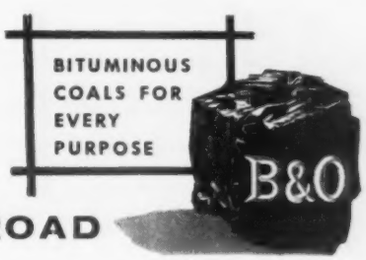


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## FROM J. M. HUBER CLAY LABORATORIES

HYDRAFINE—a new fine particle size, high brightness clay • HYDRAFINE Clay—completing the Huber clay line—uses patented Viscontrol® process to insure unvarying viscosity • What this means to paper and boxboard coating, and how you may benefit by this advanced Huber research is told on the next page...

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***HYDRAFINE's dependable uniformity results from Viscontrol®***

In paper coating Hydrafine excels in developing high brightness and gloss. In boxboard coating Hydrafine develops maximum brightness and covering power at low coat weights.

A clay of extraordinary fineness, Huber HYDRAFINE is now spray-dried in the pre-dispersed form preferred by many manufacturers. It is also available in lump and pulverized form.

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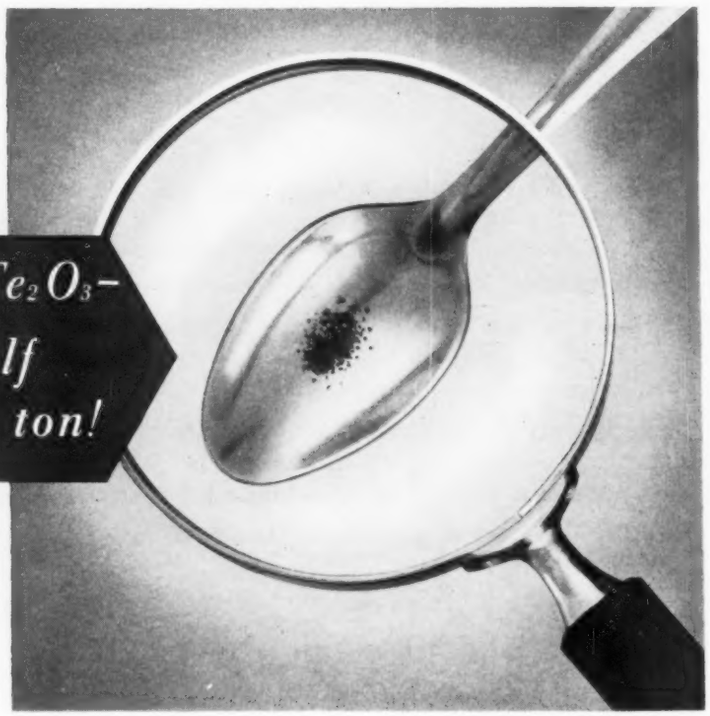

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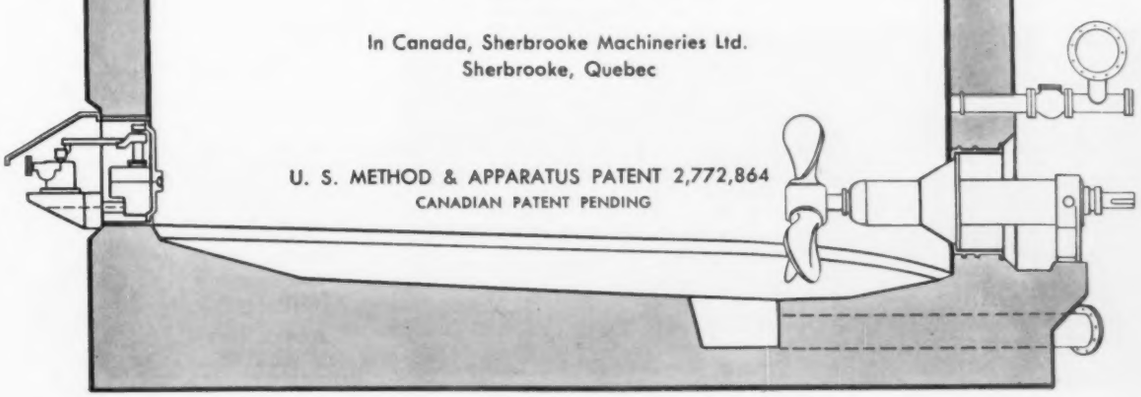

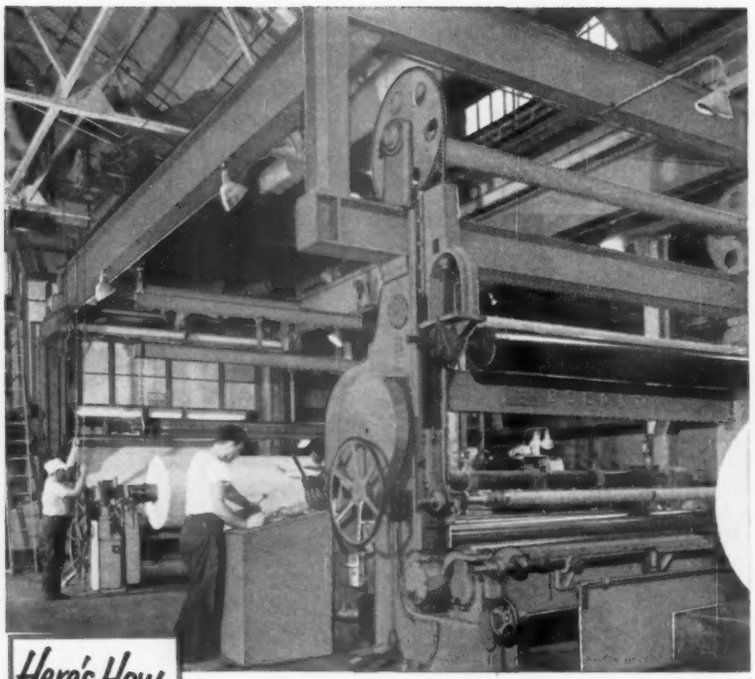

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- **Only one coat needed . . . in most cases.**
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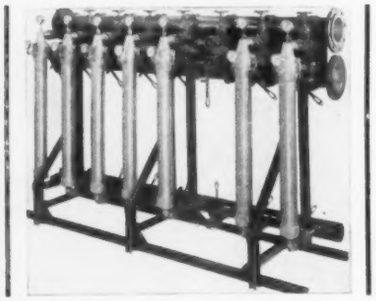
**on your Filters and Strainers**



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*Write for Bulletin 954U*

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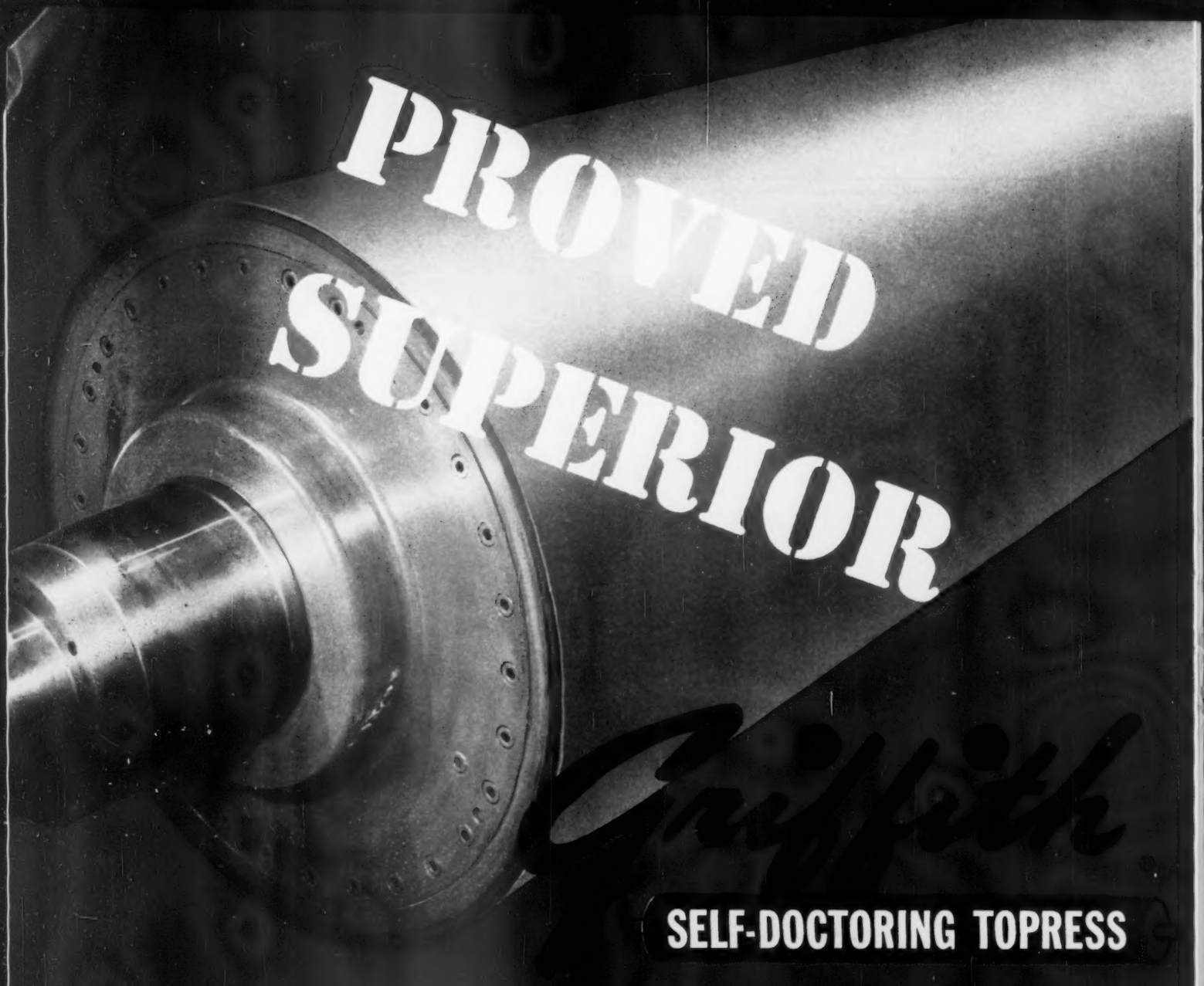


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It contains sections on first aid and emergency methods—advice that can minimize the effects of an accident should it occur.

Mail the coupon for a copy of this chart today. The wall chart supplements in easy-to-post form more complete and detailed engineering and safety information found in the 76-page book, "Hooker Chlorine."

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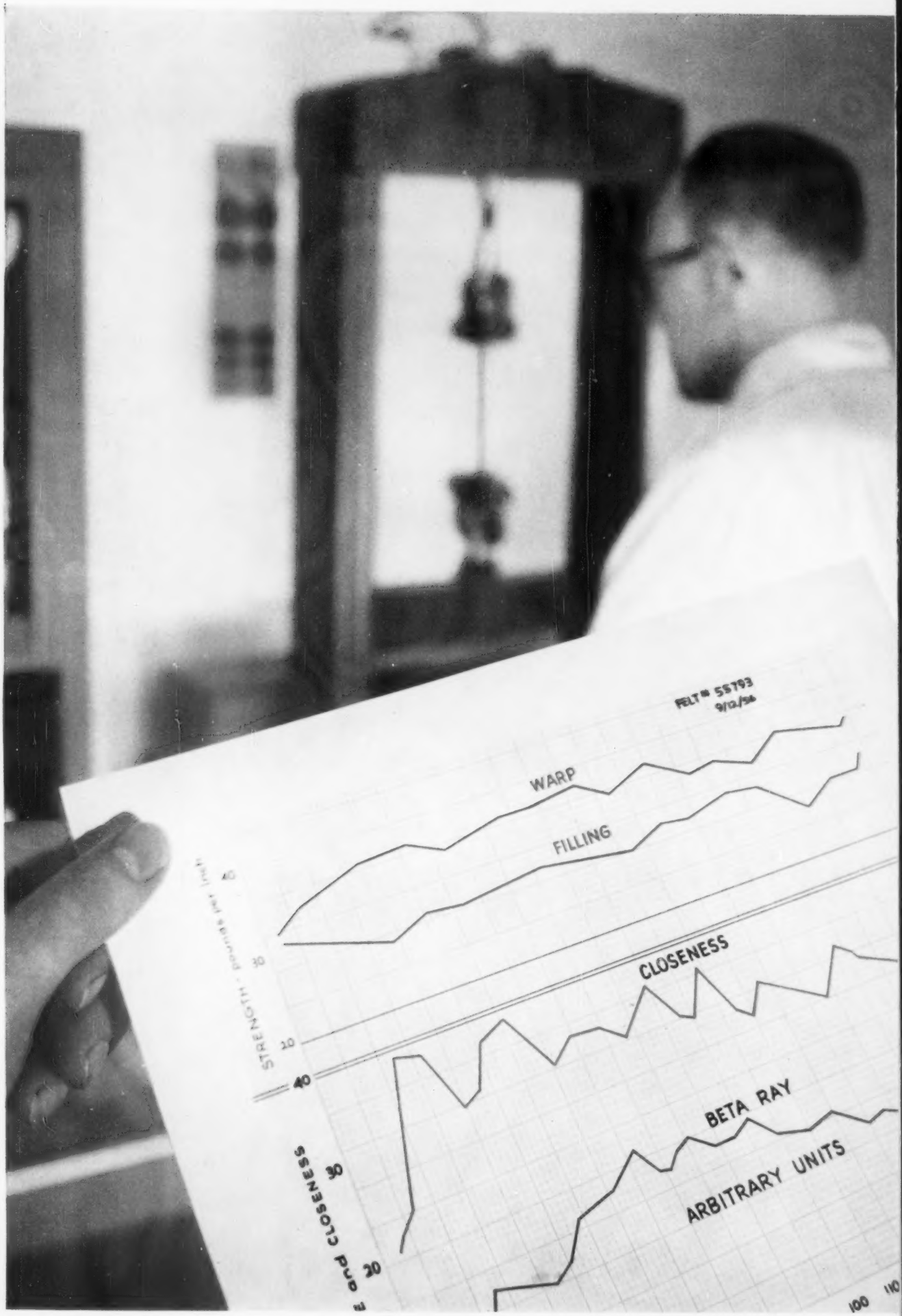
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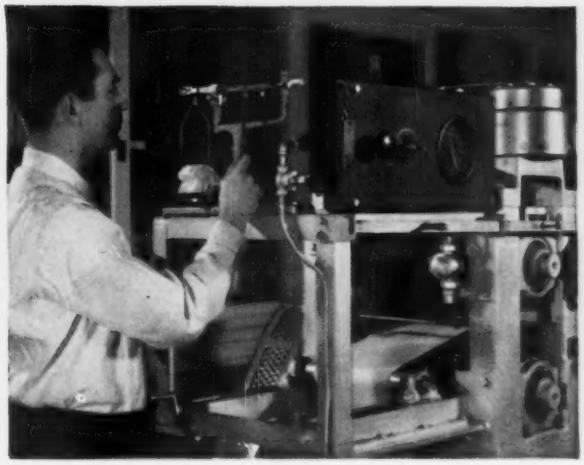

*Laboratory "squeeze press" simulates nip action of actual press on paper machine and makes possible detailed studies of water removal problem.*

*Harold Hedberg, Vice President — Research and Development, stands before top-secret mechanical laboratory where new manufacturing processes are designed, tested.*

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Today, Albany's research laboratories are hard at work perfecting felt improvements that will be ready when increased machine speeds and new operating methods require them!

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All of which is being done to assist in the solutions to your operating problems, today and tomorrow, and to make a contribution to the continuous advancement of papermaking processes. Our goal, as always, to help you produce "***more saleable tons per day***."

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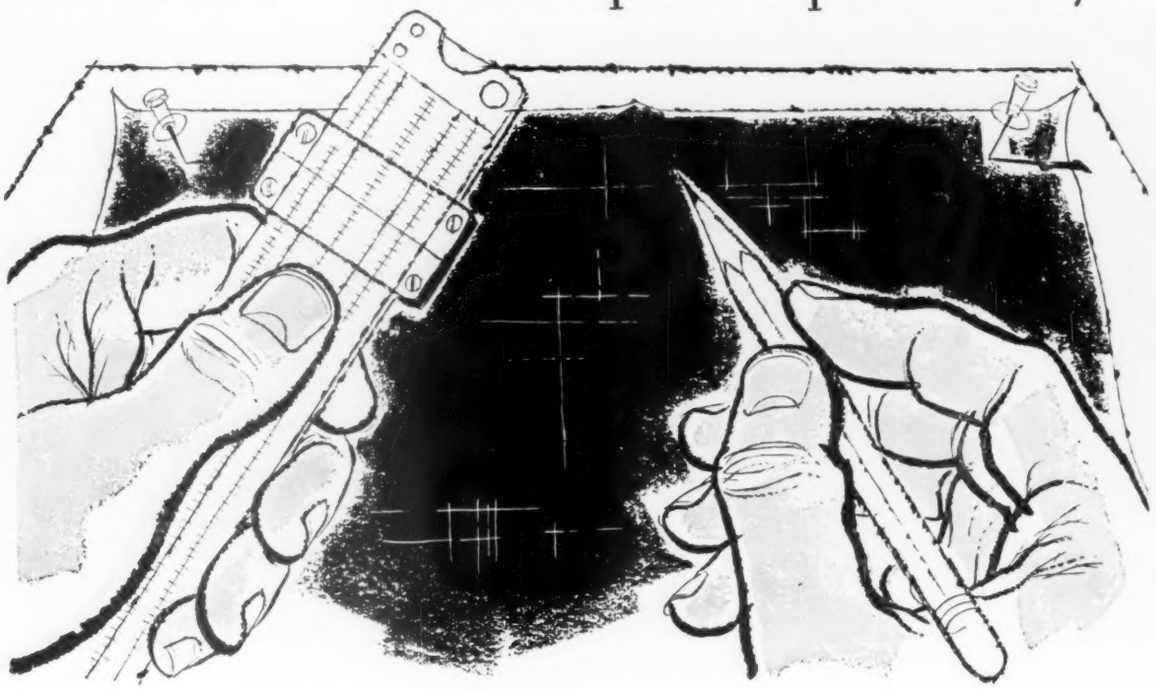

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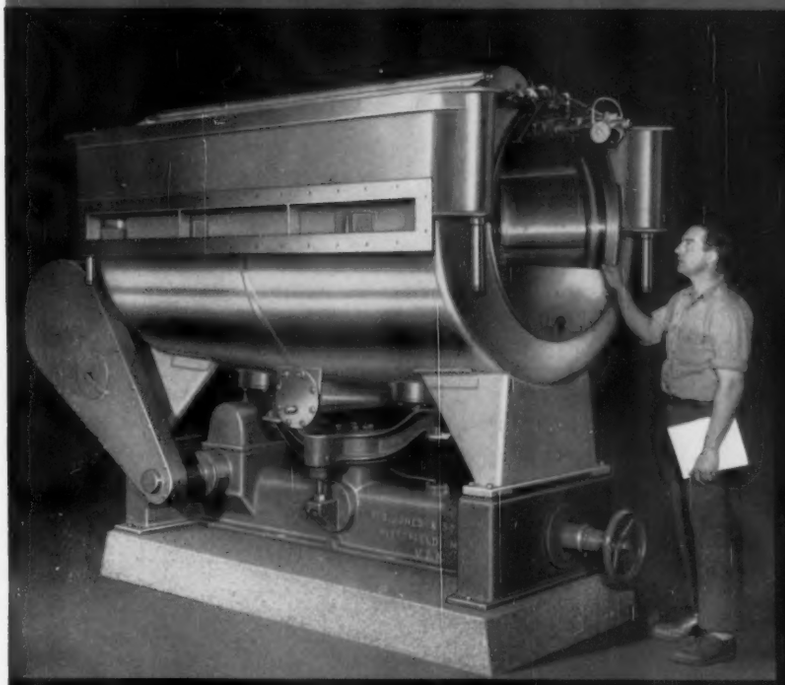

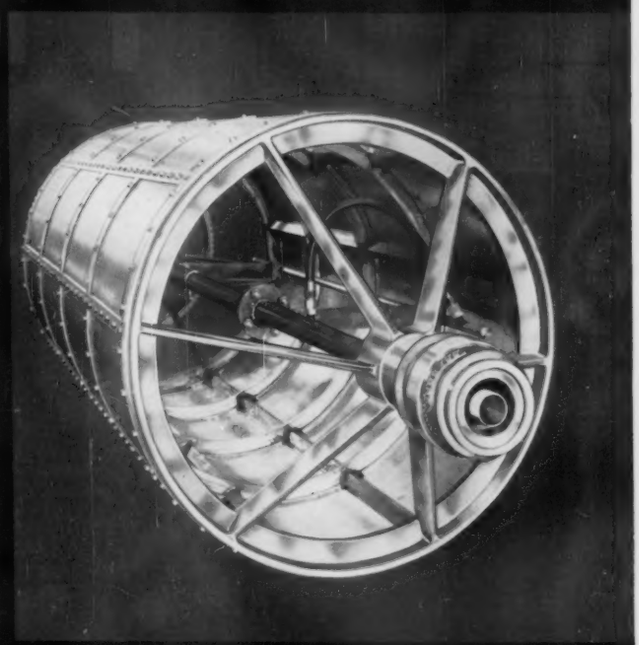

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The secret is the vibrator plate which provides vertical oscillations of 450 to 500 per minute — 50% higher than other units — in close proximity to the slot areas. For full details of this and many other features, ask your Jones representative — or write us direct.

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Furnished with the new Adapta-Plug, Jones one-piece Fulbar shell filling, and Worm Gear Plug Adjustment, the Leviathan now assures even better control, great flexibility and very economical use of power.

For large tonnage users, this big machine — utilizing up to 700 HP — offers significant economies in first cost, in floor space, in simpler piping, fewer motors, and minimum maintenance cost.

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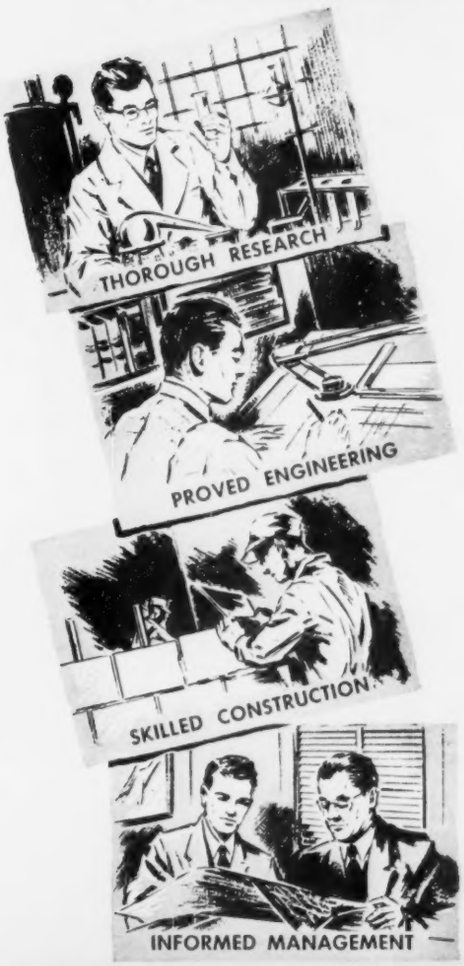


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**Big Day for Them at Kalamazoo**

DR. ALFRED H. NADELMAN (left), head of paper technology dept., Western Michigan College, welcomes back president of Paper Tech. Alumni Assn.—GERALD A. HALE, asst. to executive vice pres., Minerals & Chemicals Corp. of America.

**Express Their Views on Education**

(L to r) PROF. CLARENCE E. LIBBY, head of pulp and paper technology curriculum, North Carolina State College; DR. HARRY F. LEWIS, vice president, Institute of Paper Chemistry, and JAMES A. WISE, president and gen. mgr., Kalamazoo Paper Co.

***SPECIAL PAPER WEEK REPORT — ALSO, A KALAMAZOO WARNING***

# This Industry's Manpower Crisis

## Dr. Lewis upholds high schools, criticizes colleges . . . warns industry is losing out in competition for scientists

● A serious crisis is faced by this industry in trying to fill its present and future needs for engineering and scientific manpower.

A man with many years of direct contact with schools and colleges all over the United States as this industry's champion student recruiter, sounded this warning at Paper Week in New York, as he had done just about three weeks earlier at Kalamazoo, Mich.

Vice President Harry F. Lewis of the Institute of Paper Chemistry, once introduced as "the man with a perpetual smile" by a paper company president, was deadly serious in pointing out this grave manpower situation ahead.

His main points, at Kalamazoo on Jan. 24 and at the opening session of TAPPI in New York on Feb. 18:

1. More pulp and paper companies have got to take the manpower problem seriously.

2. Two-thirds of high school students are not planning to go to college. Many of them must be persuaded to go on.

3. The teacher is more important than a financial subsidy in determining if high school students go to college. More must be done for teachers.

4. If colleges did better we would have enough scientists. Many colleges are unproductive, not doing enough.

5. Students who go into sciences should be fitted for it—not persuaded to do so by salesmanship and scholarships.

6. Teachers must be told of new developments in industry and of the increasing opportunities.

### Audience Hears of New Activities

In preparing his address for New York, Dr. Lewis gave most of his attention to the things that this industry is doing in trying to better teaching conditions and improve methods of "finding the bright boys."

Before an audience of 466 at the annual wintertime Papermakers Get-Together, sponsored by Michigan Supts. and TAPPI groups, he did some crystal-ball gazing ahead to 1975.

But he spotted talks for both the Commodore and Harris hotel audiences with the really serious problems in education today.

In his New York address, he stressed the need "for good young people" and outlined what Crown Zellerbach, International Paper, West Virginia Pulp and Paper and Marathon are doing to bring high school teachers and students up-to-date. Crown Z is sponsoring a program at Reed College, Portland, Ore., where high school and college chemists will get together. It has also sponsored sessions for high school teachers at Oregon State College, San Jose and Oregon University. Marathon Corp.'s "grass roots" sessions at Lawrence College for 36 Wisconsin high school teachers, International Paper Co.'s program for science teachers at Auburn, and a similar undertaking being planned at the University of Maryland by West Virginia Pulp and Paper Co. were cited by Dr. Lewis in New York—as examples of how some companies are following up on the manpower sessions held a year previously by TAPPI.

"We are killing the goose with the golden eggs," said Dr. Lewis at Kala-

mazoo. "We have got to stop losing high school teachers; do something to build up their morale. Why should they take $4,500 teaching jobs when they can get $6,500 in industry? The high school teachers are products of our college courses. If they are not doing well, it is the fault of our colleges. There is a vast difference in the effectiveness of our colleges."

Th former long time dean at the Institute, now its "v.p. without portfolio"—enabling him to spend full time on his work in touring schools of the country, rebuked the college professor who is always blaming the high schools. "We aren't doing so bad in high schools. The teachers aren't given enough credit. But we can give them better counseling."

Dr. Lewis, who also is chairman of the division of chemical education of the American Chemical Society, said it is not true that only one in 11 high school students take chemistry—45% of graduates are taking it, he said. And 28% are taking physics. He said most junior high schools give chemistry and physics. He urged a fourth year of mathematics, otherwise pre-engineering students are handicapped. The number of chemistry students have increased 20-fold since 1900, he said.

**Looking into Future . . . Forecasts for 1975 . . .**

He flashed on a screen a giant reproduction of PULP & PAPER's January issue cover, which showed per capita consumption of paper in the U.S. increasing again in 1956 and continuing to rise—along with increased population. Both will be factors in a greatly increased demand for paper, he said.

"We can expect a United States population of 206,000,000 to 226,000,000 by 1975 (compared with 170,000,000 now). At the present rate of fertility it will reach the 226,000,000 figure," he said. "I am being very conservative in plotting a per capita consumption of paper of 608 lbs. in 1975 (compared to 435 lbs in 1956) and total U.S. paper consumption of 62,000,000 tons in 1975 (about 36,000,000 in 1956).

"Research and development must continue to keep pace," he said. "We are competing with many other industries. We need new studies of manpower resources. One company in the paper industry now has 600 technical men. By 1975 there should be 20,000 members in TAPPI.

"We must expand our fundamental research. Pulp and paper spent less than 1% of its sales on research in 1951, far less than many other industries. Over 25% was spent in electronics, for example.

"Our present attitude toward our biggest chemical waste—lignin—is all wrong," Dr. Lewis interjected here. "The pressure is all for disposal of lignin; it should be for its use. Ours is one of the least research-minded of industries. We are facing a serious decline in the percentage of eligible people for research work."

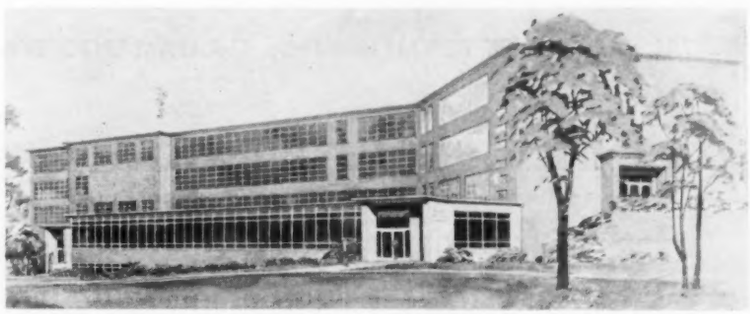
**Must Double College Facilities . . .**

Dr. Lewis said if the industry could afford to wait long enough, its engineering and scientific manpower needs would be filled by the sheer force of population growth. This might be very costly to the industry. In 1956, there were 2,900,000 students in U.S. colleges, the biggest enrollment in their history, even exceeding by 400,000 the GI bill-crammed schools.

"We will have 4,000,000 to 6,000,000 college students by 1967," he said. "We might have to build facilities equal to what we have now, just doubling our facilities as a cost of $30,000,000,000. As an industry we can wait till the numbers come, for they will come. But meanwhile, others are competing, getting the students. The nuclear sciences alone want 2,000 more students."

The percent of college-age youth going to college was only 5% in 1900, 17-18% in 1940 and over 34% in 1952, he said. But that other two-thirds now need attention. In his criticisms of some colleges he made two notable exceptions. He spoke up for Kalamazoo College and Hope College, as little schools training high percentages of scientists.

John E. Lean, v.p. and gen. mgr. of Rex Paper Co., was toastmaster at Kalamazoo. Marshall Rutz, gen. supt., KVP Co., and Paul Applegate, chief chemist, Hercules Powder Co., are chairmen of the sponsoring groups, Mr. Rutz of the Michigan Supts., Mr. Applegate of Kalamazoo Valley TAPPI.



**For Future Papermakers . . . School Addition**

# Problems Aired at Michigan School

● Punch line at the dedication program for a new $300,000 Paper Industry Laboratories at Western Michigan College in Kalamazoo were these words of James A. Wise, president and gen. mgr. of Kalamazoo Paper Co.:

"We used to urge our sons to go to college so they *wouldn't* have to work in the paper mills. Now we urge them to go to college so they *will* be able to work in the mills."

A couple of hundred leaders of the industry and allied companies, many from New York, Ohio and Wisconsin, converged on WMC campus Jan. 25 to inspect an ultra-modern two-floor wing addition to McCracken Hall, adding 12,000 useful sq. ft. to what had been a tightly cramped fast-growing paper technology dept. It isn't the biggest collegiate paper lab, but is one of the most modern.

New offices, classroom, library, various labs, fiber microscopy and microbiology room, and a large pilot area connected to the present pulp lab, are on the main floor of the addition. On a lower level is a 44-seat lecture room, classroom, lab, etc.

**Needs More Than Technologists...**

Last of 11 speakers on a program which started in Kanley Memorial Chapel and ended up at luncheon in Walwood Union Hall, Mr. Wise said:

"This industry needs more than technologists. It needs men to deal with people and ideas as well as things."

He said this was a day of "big government, big business, big schools" and WMC graduates are in demand, but they need a broad liberal education as well as the technical courses.

Mr. Wise recalled "the first chemists in the Michigan industry, back in 1910 and 1915, had tough going, but they stuck to it," and made a place for scientists. He said over 35% of em-

ployed in Kalamazoo work in the mills.

**Inflation Hits Paper Schools . . .**

"There are 150 graduates annually from paper schools in U.S. and Canada and demand is growing," said Prof. Clarence E. Libby, head of the pulp and paper technology curriculum, North Carolina State College. "Inflationary costs are hitting these schools hard, and they need collective support of regional industry groups. Outside assistance is necessary if competent teachers are to be obtained.

"Several important advantages are offered industry in hiring a paper school graduate. His training is important, because cellulose is more complex than petroleum or iron. He is as competent as a worker with two or three years' experience in mills. He feels that he is best-fitted to work in this industry, whereas other chemists and engineers do not have this attitude. He expects to remain in the industry throughout his career."

**How School in South Grew . . .**

Prof. Libby told how five companies started the North Carolina pulp-paper curriculum in 1952; now 25 paper companies and 43 converters support it. From $30,000 to $35,000 in undergraduate scholarships annually are likely to be maintained at that level for several years to come at North Carolina, he predicted. Graduate scholarships are being started. Currently there are 28 holders of scholarships in the school and plenty of summer jobs in Southern mills.

Presiding at the chapel, Pres. Paul V. Sangren, credited Ernie Ludwig, v.p. and sales mgr., Bermingham & Prosser Co., with starting the ball rolling for the Michigan school and said, "it would have been impossible without the aid of industry."

(L to r) MILT BAILEY, vice president, Bulkley Dunton Pulp Co.; MRS. FREDERICK SUTHERLAND, widow of late v.p. and director of purchases of Sutherland Paper Co., and her son-in-law, WILLIAM A. KIRKPATRICK, vice president in charge of research and development, Allied Paper Mills Corp. The latter two are sponsoring $500 scholarship at Western Michigan College in honor of her late husband.

**Other Speakers . . .**

Bert H. Cooper, chairman of WMC's advisory committee on paper technology and vice president, Kalamazoo Paper Co., said the new addition provides among the finest facilities in the U.S. for 116 students now taking WMC paper courses.

Gerald A. Hale, WMC paper technology alumni chairman and assistant to exec. vice pres., Minerals & Chemicals Corp. of America, said "men from industry are keying our education to future expansion and development." He noted the program which started 10 years ago not only trains technicians but provides education in business, sociology and economics.

Dr. Claire L. Taylor, Michigan supt. of public instruction, accepting the laboratories for the state, said "modern society demands cooperation of busi-

## Speakers and Guests at School Laboratories Dedication

(L to r) GEORGE FROMM, Midwest manager for Paper Makers Chemicals Dept., American Cyanamid Co.; JACK WALSH, New York, general manager of Cyanamid's PMC Dept., and JAMES J. HARRISON, mgr. of paperboard production, Michigan Carton Co.

(L to r) ROBERT H. HUBBELL, vice pres. in charge of sales; AL BLAKE, executive vice pres. and OLIN CALLIGHAN, mgr. of paper sales, all of Minerals & Chemicals Corp. of America, one of principal donors to the school.

(L to r) HARRY ELIASON, Swedish Cellulose Co. rep. in Kalamazoo; DR. CLAIR L. TAYLOR, Michigan supt. of public instruction, and DR. PAUL V. SANGREN, president of Western Michigan College.

(L to r) GLENN STEWART, advertising manager, The KVP Co. and editor of The KVP Philosopher; A. J. GOETZ, exec. vice pres., River Raisin Paper Co., and ROMAN J. SUESS, president and gen. mgr., Otsego Falls Paper Mills Inc.

(L to r) WALTER KOEPP, forestry dept., Michigan College of Mines; TOM G. FLETCHER, president, Fletcher Paper Co., and new advisor to the paper technology dept., Mich. State College, and FRANK LIBBY, corporate paper mill consultant, KVP Co., who helped found the Michigan school.

(L to r) JACK LEAN, vice president and gen. mgr., Rex Paper Co., who was toastmaster at Paper-Makers Annual Get-Together; MRS. ALFRED H. NADELMAN, wife of paper school head, and ROBERT T. BLACK, gen. mgr., Harvey Paper Products, Sturgis, Mich.

ness, industry and education so youth will have the greatest opportunities."

Cameron Davis, the contractor, and Ralph Calder, architect, were called on. Gov. "Soapy" Williams of Michigan was supposed to take part, but sent regrets because of heavy snowfall impeding travel. Dr. A. H. Nadelman, head of the paper technology dept., was last to respond, promising all efforts will be bent to improving courses and students.

New scholarships for the department are a $1,000 one from Draper Bros., third in name of the late Lewis H. Breyfogle, a $500 one from Appleton Wire Works, plus a $500 gift for equipment, and a $500 one honoring the late Frederick Sutherland, from his widow and son-in-law, W .A. Kirkpatrick.

## Man Who Started A Paper School

• Unless you knew the man whose idea it was—11 years ago—to start a paper school in Kalamazoo, you wouldn't have known that he was sitting with his son off on a side of the chapel at dedication ceremonies for the new Paper Industry Laboratories at Western Michigan College.

Pres. Paul V. Sangren of WMC, in the dedication address, credited Ernie Ludwig, vice pres. and sales mgr. of Bermingham & Prosser, wholesale paper merchants, with having started the ball rolling for the paper "school" which now has an enrollment of 116 students. Only a few who heard him knew Mr. Ludwig was in the audience.

"It was the greatest thing in my life," Mr. Ludwig later told PULP & PAPER. "I got the idea when my son here—Bob—came back from the service. It was too late then for Bob to benefit, but I thought it would be a wonderful thing for other youngsters.

"My first move was to take the late Dr. Deo Fox, then head of the department of industrial arts at Western Michigan, to one of the paper industry meetings at the hotel in Kalamazoo. That was in 1946. The first men in the industry who joined us and worked enthusiastically to promote the idea were Bill Kirkpatrick, then technical director and now vice president of Allied Paper Mills, and Frank Libby, then supt. and now paper mill consultant for The KVP Co.

"After a couple of meetings with the paper industry people, Dr. Fox said 'we just can't fail.' Dr. Gerald Osborn, then teaching chemistry, and now dean of the college, was another who joined in our project very early and did much to help it along. The enthusiastic support of the paper industry and the allied industries grew and spread rapidly."

From International Paper Co., Niagara Falls, N.Y., Dr. Alfred H. Nadelman was brought to Kalamazoo to head the new "school" and he has been the spark plug, ably supported by many others, who assured its rapid growth. Technically, its status was first a curriculum, now it is a department—next goal, a school.

Mr. Ludwig himself started in the paper industry in 1910 as a bookkeeper in a now non-existent mill, Wheat Paper Co., which had been located in Elkhart, Ind. His son, Bob, incidentally, has done all right, even though he didn't have the chance to take the paper technology courses. He is now sample supervisor for all three Allied mills in Kalamazoo.

**"Greatest Thing in My Life—"**

. . . said ERNIE LUDWIG (left), who conceived idea for paper school. Too late for his son, BOB LUDWIG (right).

**Dr. DeMontigny (right) answers Ohio TAPPImen**

## What Factors Influence Paper Strength?

When is paper strength due to fiber bonding? When to surface tension? How does the paper machine itself affect strength?

These and more questions were answered by Dr. Raimbault de Montigny, technical director of the E. B. Eddy Co. for 160 members and guests of Ohio TAPPI at Middletown, O., on Jan. 10.

Dr. de Montigny mentioned mechanical fibrillation and the exposure of amorphous cellulose by beating as means of improving fiber bonding and paper strength.

Experiments on pulp sheets at the E. B. Eddy mill, and on sheets made of glass fiber indicated that the development of tensile strength in the range of 8-22% solids is due principally to surface tension characteristics rather than fiber bonding. As a pulp sheet is dried above 22% solids cellulose, bonding becomes the principal factor in sheet strength, with the tensile strength reaching its maximum point at about 75% solids.

Sheets made of glass fiber showed a strength increase from 8-22% solids, but a decrease on further drying, because of the lack of fiber bonding ability of the dried glass fibers.

Dr. de Montigny stressed the importance of various sections of the paper machine to paper strength. Tight draws result in a decrease in stretch, but increase in machine direction tensile. The importance of sheet moisture to the retention of strength on calendering was discussed.

Ellsworth H. Shriver, The Mead Corp., Chillicothe, O., was chairman, and William Petrich of Howard Paper Mills, was program chairman.

## PICTURES OF PEOPLE IN THE NEWS

### New Posts in West Virginia

In new posts at West Virginia Pulp and Paper Co. are DAVID L. LUKE 3rd (left), vice pres. in charge of commercial activities and JACK T. WALKER (right), vice pres. in charge of engineering and research. Mr. Luke will direct sales, marketing, finance and accounting as well as liaison with West Virginia's domestic and foreign subsidiaries. Mr. Walker's responsibilities will include supervision and coordination of company's six research labs and two pilot plant operations, plus central staff of engineering. Mr. Luke, son of President David L. Luke Jr., is a Yale U. grad and served as a Marine Corps torpedo plane pilot in Pacific; he joined Westvaco in 1953.

### Mexico's Newsprint Plans

ANTONIO SANCHEZ ALDANA, 37 year old graduate of Santa Clara Univ. in California, has been appointed chief of the forestry operation for Fabricas de Papel Tuxtepec, S.A. de C.V., which will be the first mill in Mexico to start again the manufacture of newsprint in that country. Years ago, when revolutions were periodic in Mexico, political pressures made newsprint bad business and none has been produced since. Parsons & Whittemore of New York and Sandwell & Co., Vancouver, B.C., are engineering and building the mill which will be near Tuxtepec, Oaxaca. Mr. Sanchez Aldana was former woodlands manager for the Atenquique kraft mill built in the mid-'40s near Guadalajara, Mex., and has been engaged in other wood production work. In his logging work, he has used U.S.-built Caterpillar and International tractor yarders, Ford, Chev, Mack, White and Kenworth trucks and trailers.

### Promoted in Canada

ARCHIBALD C. KENNEDY (left), manager of industrial relations for MacMillan & Bloedel, Vancouver, B.C., has been named vice president, industrial relations, according to Pres. H. S. Berryman. The division was organized as a personnel dept. 18 years ago after Mr. Kennedy returned from a tour of Canada and the U.S. studying labor conditions; he has managed it since its inception. CHARLES G. WRIGHT (right) has been promoted from assistant manager of the division to manager.

### In Industry News

HOMER L. HUMBLE (left), former vice pres. International Brotherhood of Pulp, Sulphite and Paper Mill Workers Union at Mobile, Ala., and previously with International Paper Co. at Mobile, has joined the Industrial and Community Relations Dept. of the Robert Gair Div. of Continental Can Co.

GEORGE V. LA MONTE Jr. (right), succeeds his father as president of George La Monte & Son in a father-to-son tradition which has been followed since founding of the business in 1871. He has been with Nutley, N. J. company for 18 years.

### Leaders in Western Enterprise

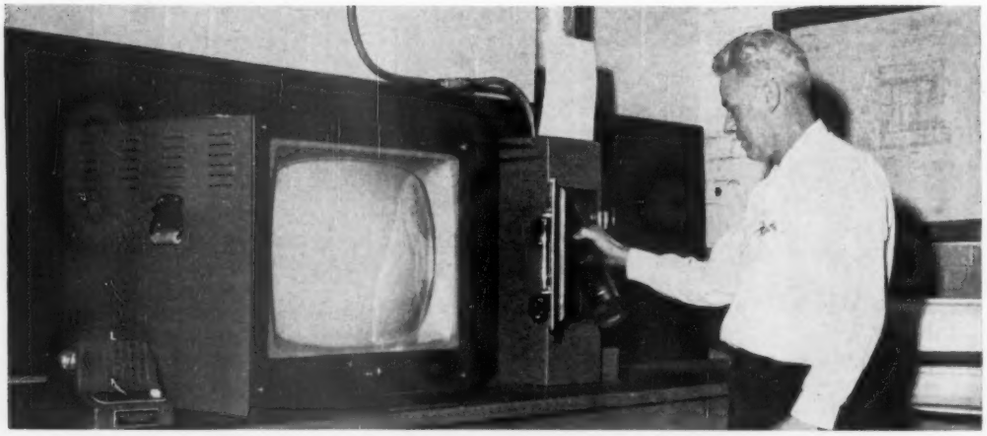
Executives of Griffith Rubber Mills, Portland, Ore., and its recently acquired subsidiary Chemical-Proof Corp., Seattle, Wash. (l to r): Pres. ZINA A. WISE; NORMAN J. JOHNSON, appointed as vice pres. and gen. mgr. of both organizations; GEORGE C. HOUGHTON, formerly vice pres. and sales mgr. of Chemical-Proof, becomes vice pres. and gen. sales mgr. of both firms and will continue to reside in Seattle; and ZINA A. (ZAN) WISE JR., for past year in charge of Griffith pulp and paper mill sales, has been named assistant sales mgr., headquarters at Portland.

### In Western News

T. N. BEAUPRE (left) has been named executive vice pres., Columbia Cellulose Co. at Vancouver, B.C., succeeding Wentworth Brown, who has joined W. R. Grace & Co. as a senior executive in New York. Mr. Beaupre will also head Celgar Ltd., the subsidiary of Canadian Chemical & Cellulose now making preliminary plans for an integrated wood processing operation near Castlegar, B.C. He is a Montreal-born McGill graduate. EINAR "PAT" REITEN (right) transfers to Portland, Ore., as acting personnel manager for Simpson Logging Co.'s Oregon operation; duties will include safety. He has been general safety supervisor for Simpson residing in Seattle and covering company plants in Washington and California.

### Honors Truscon Executive

JAMES E. BLUE (middle), vice president in charge of sales, Truscon Laboratories, 1700 Caniff, Detroit, Mich., receives gold watch honoring him for 40 years with the national paint and maintenance coatings firm. BASIL HOWELL (left) is Truscon president, and J. C. KNOCHEL (right) is vice president of Devoe & Reynolds.



**Fresh-from-reel paper samples go into pneumatic tube to laboratory and . . .**

**In 15 minutes results are relayed by overhead tv camera to mill. This is . . .**

# How TV Aids in Quality Control

## PULP & PAPER's exclusive pictures and on-the-spot report tell what developed at "brainstorming session"

**By MAURICE R. CASTAGNE**
**Eastern Editor, PULP & PAPER**

Fitchburg, Mass.

● In efforts to make a good mill operation better, Crocker, Burbank & Co., Assen. has found a new ally—television. (Yes . . . association is part of its name, in case you wondered.)

Controlling the production quality of seven separate mills at Fitchburg, Mass., with a total of 17 paper machines has always been a challenge. Their problem: The need for centralized control—but how to get the information to and from the mills.

When this 131-year-old company outgrew its more recent laboratory facilities two years ago, it considered these possibilities:

1—Replace the old laboratory with a modern one equipped with the best industry has to offer, or

2—Augment existing stations at each mill with full-scale testing facilities.

Idea No. 2 entailed more manpower, duplication of costly equip-

ment and would not necessarily achieve the primary objective of product uniformity.

Idea No. 1 left unsolved the problem of communication between the mills. This problem was the difficulty in getting samples from current production to the laboratory for testing and analyses and the results back to the mill in time to mean something to the operators.

### "Brainstorming Idea" . . .

The problem was solved during one of the company's "brainstorming sessions." These are twice-a-day informal meetings during which the Crockers get together with other production and sales personnel.

During these sessions majority opinion rules on any topic from how to reduce excessive wire wear (put on a Rotabelt—they did and reduced wire wear 50%) to buying new paper machines (two new machines are now being installed).

It was during one of these meetings that the idea of using television and pneumatic tubes such as are used in department stores was developed. Other ideas not deemed feasible were teletype and telewriter.

Crocker, Burbank called in Barclay & Dexter Laboratory, Inc., asked if they could handle such an installation. They could and assigned Don Wise to the job.

With the communication problem solved, a list of equipment was prepared which was thought necessary to make the laboratory one of the best in the industry and suited for Crocker, Burbank needs. Management went over the list, okayed every suggestion.

Results: Technical mill men are trekking to Fitchburg to see what many consider the ultimate in mill testing equipment.

The new two-story steel framed structure was designed and built by Stone & Webster Engineering Corp. to Crocker, Burbank specifications. Total cost: $275,000, excluding equipment.

### Cost Breakdown . . .

Clearly the pride and joy of the company is the television and pneumatic tube system, which connects the central control laboratory with No. 8 mill. Total cost of around $34,000 is broken down as follows: $12,000 for television camera and receivers. $13,000 for the pneumatic transit tube. $9,000 for wiring.

Before installing this system, the samples of production from five machines in No. 8 mill were collected and delivered to the lab in a jeep. By the time samples were tested they did not mean much and, explains Bigelow Crocker, Jr., whose primary concern is with No. 8 mill: "We were paying a lot of money for 'history.'"

Now, the entire 200-ton a day production of these machines is monitored by the television circuit.

### How It Works . . .

Here's how it works, as seen by PULP & PAPER. The boss machinetender on No. 5 machine sample jacks a strip of paper from the dry end, walks over to the machinetenders' office, places the sheet in a container and inserts it in the pneumatic conveyor.

The 2600-ft. trip through a 4-in. dia. aluminum line is made to the central lab in 80 seconds. The mill is on a higher level than the lab building, so pressure is used to move the container up and vacuum to bring it down. A Roots-Connersville pump does the job.

When the container is in transit, a red light signals to avoid opening of the tube. Upon arrival at the lab it is immediately tested, analyzed and subjected to various other tests which the company may deem advisable for certain grades. Upon completion, results are recorded on one of five forms (one for each machine).

A 17-in television is positioned back at the machinetenders' office and a 12-in. receiver is in the sample room adjoining the conference room. By pressing a selector button, it is possible to move an RCA camera, mounted on an I-beam overhead of the performance records.

Thus, any of the machinetenders can check to see how close his machine is running to standards. This information is available within 10 to 15 minutes.

### Advantages of Television-Pneumatic Tube . . .

Bigelow Crocker, Sr., told PULP & PAPER this is why Crocker, Burbank likes it and why it is considering the system for its other mills:

1—Has achieved better control at low cost. It is faster than the previous system, with less labor, and operation is now running much closer to standards than ever before.

2—The company now has a continuing record of production.

3—It knows within 10 to 15 minutes what once took an hour to learn.

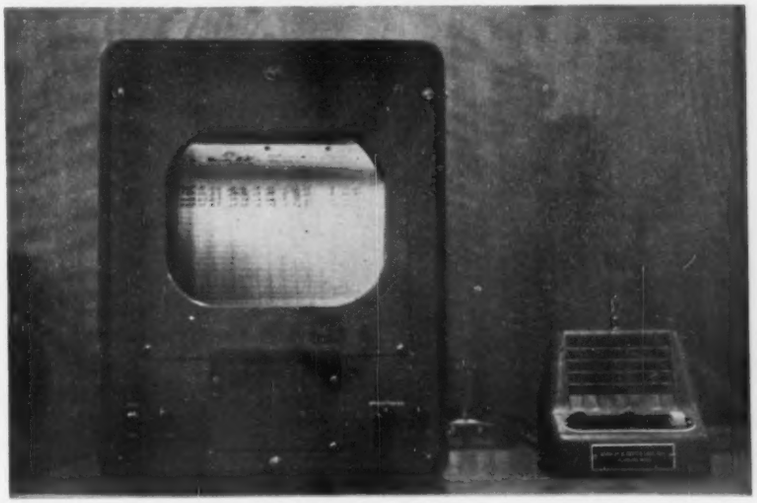
4—Under the previous system, when tests were completed, the lab technician phoned results to the mill. Sometimes two people were tied up on the phone for hours. The information had to be copied on a card at both ends, recapitulated and then typed on a form. Now, the test results are copied once.

### Features of New Laboratory . . .

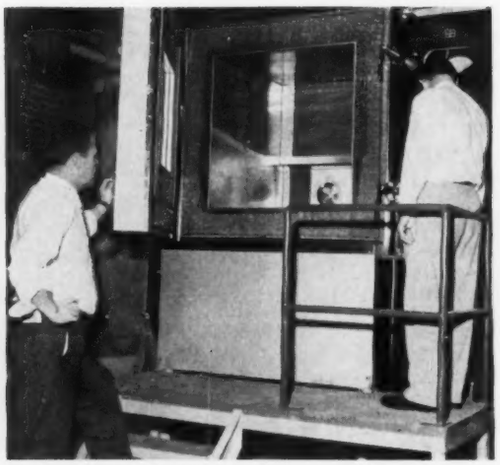
1—The existing laboratory building, 190 ft. long by 44 ft. wide, has been replaced by a two-story steel framed structure with an insulated metal deck roof supported by open web long span steel joists. These eliminate the necessity for interior columns in the laboratory.

2—Metal wall panels were used for sidewalls. These are No. 18 U.S. gage metallic-coated steel on the inner face, fluted sheets of Alcoa No. 16 B&S gage aluminum with striated finish on the outside. Between these sheets, there is an 1.5-in. thick Fiberglas insulation.

3—Around the new section of the building is continuous aluminum sash designed for outside glazing with horizontally hinged top and bottom ventilating sections and single thickness clear glass.



**TV shows how close to standards machines are actually operating.**



**Humidified testing room for non-electrical papers . . . and unusual environmental chamber.**

4—The entire ceiling of the new building is acoustical tile-covered. Above this is a 2-in. blanket insulation to further reduce sound transmission.

5—Lightweight concrete block partitions, 4-in. thick, were provided between the labs and the corridor walls. Windows were provided in the corridor walls above the top of the laboratory tables to furnish natural lighting in the corridor.

6—Three tilting bins, without bottoms, are used for discharging waste material to open top trucks in the basement.

7—An overhead-type door on the first or basement level automatically opens for the laboratory jeep when the driver presses a button.

8—Deflector screens are provided for all windows. This is particularly welcome because of the intense glare from the snow-reflected sun during the winter.

As you enter the new building, a short flight of stairs leads to the main or second floor. The visitors' lobby faces the main office.

**To the right of Lobby are:**

Offices for key technical personnel.

Conference room.

Library (alternates as a second conference room).

Sample room—representative production of 17 machines and the 12-in. television receiver are located here.

Darkroom—for viewing films. Also here is a Unitron microscope equipped with a Polaroid-Land 60-second camera.

Washrooms.

**To the left of Lobby are:**

Two humidified testing rooms; one for electrical papers and the other for standard grades. This latter room is equipped according to TAPPI standards.

Analytical laboratory.

A Common room for preparing reports on tests and other work of a technical nature.

Un-humidified capacitor test room.

Power factor test room. Here an unusual unit, a General Electric power factor, one of five in operation in the U.S., measures the power factor of capacitor paper in percentages and also dielectric constant.

Of interest on the first or basement level are:

The environmental chamber. Here, paper can be subjected to temperatures ranging from 40°F below zero to several hundred degrees above. Made by Tenney Engineering Co., Baltimore, Md., the chamber is operated by a cam which can change the temperature up or down according to a pre-arranged program, for any length of time.

**Experimental Coating Machine . . .**

For evaluating new coating techniques, Crocker, Burbank has a 32-in. wide experimental coating machine capable of coating speeds up to 2,000 fpm.

Space has been provided alongside the coater for an experimental paper machine. Additional space and equipment are allocated for new products development.

**Crocker, Burbank Policy . . .**

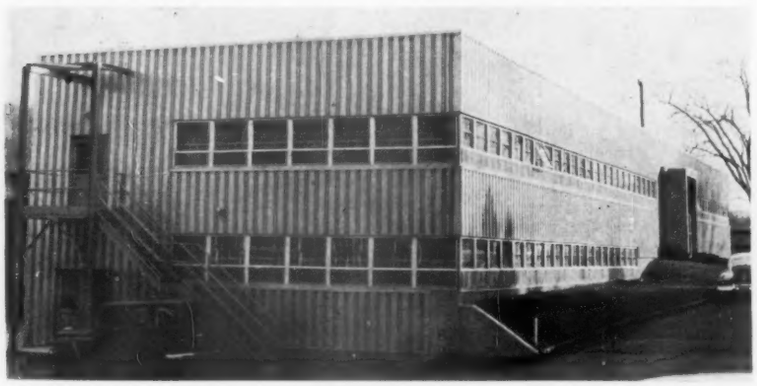
For 31 years, Crocker, Burbank has pursued this 3-point policy:

1—Taking the best the industry has to offer in the way of equipment and ideas and endeavoring to improve on them.

2—Production of specialty grades best suited to its manufacturing ability and economic feasibility.

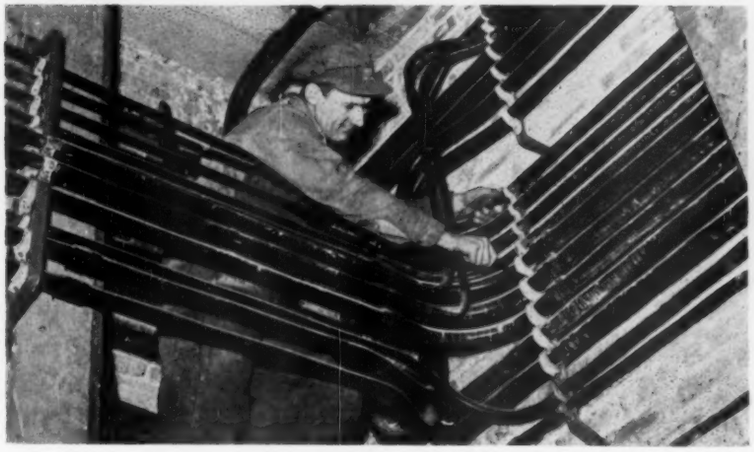
3—Substitution of more economical fibers in grades of paper using more expensive fibers.

With an announced intention of concentrated emphasis on new product and processes development, the industry can expect some startling new concepts of papermaking in the near future from C-B. **END**



**Best equipment industry has to offer is in this new laboratory.**

# How To Do It



**New Conduit Outlasts Old 10 to 1**

Plastic-coated welded steel electrical conduit has outlasted standard carbon steel conduit ten to one at the Charmin Paper Products Co. Evidence of highly corrosive atmosphere is shown in corroded carbon steel clamps shown being replaced here by workmen. New conduit was supplied by Steel and Tubes Division of Republic Steel.

## How Charmin Halts Corrosion in Pulp Area

After six years of service, plastic-coated light wall welded steel conduit has outlasted standard heavy wall electrical conduit ten to one in standing up against highly corrosive atmospheres at Charmin Paper Products Co., Green Bay, Wis., division of Procter & Gamble.

At one time, acid fumes from the mill's sulfite digester combined with moisture to corrode standard heavy wall steel conduit so badly in certain mill areas that it had to be renewed as often as every six months. Six years ago, the conduit was replaced with light wall, plastic armored raceways. Today it is in much the same condition as the day installed.

Since the original replacement, the mill has put in about 50,000 ft. of Electrunite "Dekoron-Coated" E.M.T. (electrical metallic tubing) furnished by the Steel and Tubes Division of Republic Steel.

The once troublesome area encompassed the mill's bleach plant operation. A stepped-up maintenance program involving continual painting and repainting of the heavy wall conduit could not keep up with the outbreak of corrosion. Even pin holes in conduit permitted corrosive atmosphere to attack the insulation on wires inside raceways, setting up an electrolytic action which helped speed up the corrosion, and interfered with conductivity.

According to Charmin engineers, who specified the new conduit in a plant-wide replacement program, installation was easy. It was "bend as you go," they said, for the light wall raceway can be bent by one man using an Electrunite Bender. Plastic-coated light wall conduit requires only simple compression couplings each serving as a union. A wrapping of double thickness polyethylene or vinyl-back insulating tape seals the coupling. Charmin engineers said ease of installation helped hold down the cost to about the same as the previously used galvanized heavy wall conduit.

**Wraps on Polyethylene Tape**

Charmin maintenance man wraps rigid steel plastic-coated conduit with covering of polyethylene tape.

### Reduces Rips in Rolls

A roller device to minimize rips at perforations and insure more tightly wound rolls is the suggestion of James Lyman, converting dept., Charmin Paper Mills Inc. A lightweight aluminum shaft, with roll bearings at each end, is mounted on a three shaft turnover rewinder to revolve against the "log" roll. Award was worth $100 to Mr. Lyman.

### Joint TAPPI-Supts. Meeting Sponsored by Dow Chemical

A special joint Michigan TAPPI-Supts. joint meeting on packaging is being sponsored at Midland, Mich., Thur. and Fri., Apr. 4-5, by Dow Chemical Co. and Dow-Corning.

Hotel accommodations are being arranged in Bay City, said Charles W. Cairns, asst. to manager of coating sales, Dow Chemical Co. Speakers will include a packaging specialist from Sutherland Paper Co. Dinner speaker on Apr. 4 will be Dr. John Grebe, Dow director of nuclear research. Tours of the Saran film plant, latex plant, etc., at Midland are on the program.

### Savage and Briggs Plan Gearhart Meeting

The reduction of costs and elimination of wastes are to be the basic theme of this year's Pacific Coast TAPPI-Superintendents joint spring meeting according to Jack V. Savage, sulfite mill superintendent of Crown Z Camas and co-chairman of the sessions. This meeting will be held June 6-8 at Gearhart Hotel, Gearhart, Ore.

Co-chairman Ben T. Briggs, Olympic Research Division of Rayonier Inc., Shelton, Wash., says the subject material is of industry-wide concern and should be "most timely" during the current period of increased materials costs and industry growth.

# A Woodpulp Mill for Kalamazoo

- ✓ Unusual plans of Allied Paper Mills
- ✓ Possible further plant acquisitions
- ✓ From loss to profit via merger techniques
- ✓ Conversion of A.P.W. mill to new grades

● Fast-growing Allied Paper Mills Corp. is going to build one of the industry's largest neutral sulfite semi-chemical woodpulp mills within the city limits of Kalamazoo, Mich., and one of the few in the world built for this purpose from the ground up. It will be a batch pulping process, instead of continuous, with 100% recovery of effluent, to be completed in late 1958.

Meanwhile, Allied, now owner of A. P. W. mill in Albany, N.Y., and with three paper mills in Kalamazoo, is considering acquisition of other companies or mills, for groundwood specialties production.

From Allied executives in Chicago and in Kalamazoo, PULP & PAPER obtained latest information on the fast-breaking developments concerning this company. New processing ideas from Canada, Sweden and Italy have been scrutinized and some will be adopted.

"There is more wood in Michigan than we need and we will buy all our wood, virgin hardwoods never before harvested," Arnold H. Maremont, Allied chairman, told PULP & PAPER. In his "best judgment," he said, the mill will start up as a 100-ton unit, costing $4,500,000, but probably will be increased to 200 tons by 1960. He also disclosed Allied's interest in further mill acquisitions. "We may go into groundwood specialties," he said.

Allied has been purchasing about 33,000 tons of sulfite and sulfate pulps, mostly sulfate, and 10,000 tons of hardwood pulps. Most of this will be replaced with the products of the new mill, said Mr. Maremont. "It will add $2,000,000 to our earnings before taxes," he said.

The pulp mill will be within Kalamazoo city limits near the south boundary of the city. It will be near the Monarch mill, on a 20 acre tract on the north side of Cork St., purchased last summer from St. Regis.

**"There's More Wood Than We Need . . ."**

Thus ARNOLD H. MAREMONT, Chicago, financier and chairman of Allied Paper Corp., explains to PULP & PAPER the outlook for pulp mill. A new figure in this industry, who moved over from washing machine business, Mr. Maremont is part owner of a million-acre California ranch, has "angeled" Broadway plays.

### Engineers Assisting in Plans . . .

William A. Kirkpatrick, vice president in charge of research and development for Allied Paper Mills, made a trip to Italy, Germany and Sweden recently to study processes that might be used in the new Kalamazoo semi-chemical pulp mill. He was accompanied on this trip by Roy W. Emery, Toronto, Ont., pulping consultant.

He credited Mr. Emery with being of considerable assistance in the Allied project but indicated it will be necessary also to bring in American engineers in the work. So far, some checking and economic evaluation work has been provided by John C. Hoad and Associates, Ypsilanti, Mich., a firm which has been preparing for work in the neutral sulfite semi-chemical pulping field. George Banzhaf, Milwaukee consulting forester, also has done a survey of hardwood resources near the Allied Mills.

H. L. (Hal) Field, who joined Allied in Aug. 1956, will be superintendent of the new pulp mill. He formerly was with West Virginia Pulp and Paper Co., at its Mechanicville, N.Y., semi-chemical pulp mill and also did work for Deerfield Glassine Co., with C. W. (Bill) Cassell, of Hoad and Associates, and former engineer with Everett, Wash., and Kalamazoo mills.

Mr. Field and John Dam, Allied's chief chemist, have been working very closely with Mr. Fitzpatrick on the project. It is probable stationary digesters will be used as a batch system of pulping, rather than a continuous system, will be used. Also being given serious consideration is the new Gauvin recovery process developed at the Canadian Pulp and Paper Research Institute in Montreal. Allied is planning 100% recovery of effluent from pulping.

### Wood Supply . . . Barking-Chipping Plants . . .

Depending on its size, the pulp mill will require from 50,000 to 90,000 cords of purchased pulpwood per year.

This will be aspen or other hardwoods. Farmers will be among suppliers. Current price for such wood is $12 to $14 per ton. Michigan Conservation Dept. officials will assist in developing sources.

A woodyard and barking and chipping plant will be built at the mill site. Another barking and chipping plant will be located in the upper part of Michigan's Lower Peninsula.

Pulp will be bleached and refined at Allied's Monarch mill. Large pipelines will be built for pumping pulp one mile to the Bryant mill and two miles to the King mill. Bleaching will be by three-stage process. Stainless steel will be used extensively throughout the operation and large quantities will be required.

Allied has had good experience with buying hardwood semi-chemical pulp from Rhinelander Paper Co., and Mr. Kirkpatrick said its use improved quality of Allied paper grades. The Kalamazoo mill are expected to use a mixture primarily of hardwood pulps and waste paper. Two per cent of Allied's production is photographic plate papers. Eastman is the only other U.S. producer.

**Something New In Kalamazoo . . .**

Thus, one of the great papermaking cities of the world will reverse a basic pulp and paper trend by acquiring its first woodpulp mill three-quarters of a century after the earliest of its nine paper mills were started. Kalamazoo's paper industry was created without trees or much water, simply because a handful of papermakers of the last century—the Milhams, Bryants, Curteniuses, Kings, and Pagensteckers—liked the community, and because the great paper market of Chicago was nearby.

In western Michigan most companies long have turned deaf ears to ideas of expansion. Newfound wealth in untouched hardwoods changed all this. But Allied isn't the first paper company in Michigan to turn to virgin hardwoods as a basis for growth. Otsego Falls Paper Mills, Watervliet Paper Co. (now part of Hammermill) American Box Board Co., and S. D. Warren Co., when it acquired the Muskegon mill, are others in southern Michigan which have built semi-chemical hardwood pulp mills.

**New Management for Allied . . .**

Mr. Maremont, a financial man, and Henry Buckingham, a manufacturing man, are the chairman and president, respectively, of Allied, the same positions they held in Thor Corp.

Under them are a team of vice presidents—Mr. Maremont called them Allied's former "strong second line of management." These are, besides Mr. Kirkpatrick, Fred Chaplin, Chicago, sales manager, Jack Gilman, production mgr., and Herb Johnston, chief engineer. All are Allied veterans, comparatively young men. G. A. Littlefield, Allied controller, has moved to Kalamazoo. Dwight R. Curtenius and Fred C. Fisher, who were president and executive vice president, have stepped out of the picture.

**Planners and Consultant . . .**

(L to r) WILLIAM A. KIRKPATRICK and HERB JOHNSTON, Allied vice presidents working on development and engineering angles for new expansion, and ROY W. EMERY, Toronto consultant.

A new figure in paper industry management in America, Mr. Maremont is co-owner with some associates of a million-acre ranch in California. He also has earned a reputation as an "angel" for Broadway theatrical ventures. He came to Chicago from Missouri. Mr. Buckingham was born in England.

Mr. Chaplin was recently elected county commissioner of Cook county, which embraces Chicago. He was former president of the township of Northfield, a Chicago suburb, and is a Republican.

**What Happened to Thor . . .**

One of the most interesting developments of recent years in American business was the switch that Mr. Maremont and his associates in Thor made from a nationally famed washing machine business that was losing money to a profitable paper business.

The Thor Corp., which lost $781,079 in 1955, first took over Allied Paper Mills as a division. Allied earned $4,000,000 in 1956. Thor quit making washing machines in 1955, and licensed another firm to make the Thor machines, but this firm since failed. Meanwhile Thor Corp. dropped its name, and took the new name of Allied Paper Corp. Because of a $3,500,000 tax carry forward, only $300,000 was set aside for federal taxes in 1956.

Allied still does a very small business in servicing parts on the old Thor machines.

It acquired the Philips Control Corp., which makes relays for computer and communications fields, with sales of about $3 to $3½ million a year. This is operated as a division.

Allied also owns the biggest Christmas glass ornament industry in America, which has sales of $4½ to $5 million. This unique division not only manufactures Christmas ornaments, but imports high priced ornaments from Germany and Italy, and low priced ones from Japan, and claims to supply about 80% of such ornaments tothe American trade.

But even with these interesting divisions, Allied Paper Corp. sales volume is 82% in paper. The paper division sales totalled $32,600,000 in 1956.

**Outlook Good, Says Maremont**

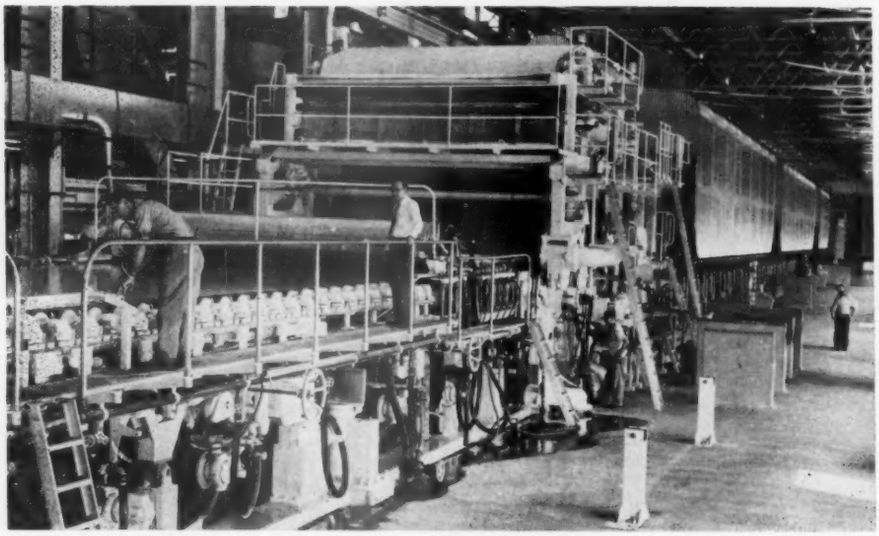
In a talk in Chicago, Mr. Maremont quoted figures from the Econometric Institute in New York City to show that, in contrast to some other grades in the paper industry, the present plans for expansion in the book and printing grades "will be inadequate to meet demand by 1965."

He stressed Allied's plans to remain in the book, printing and similar fields. He said it is now one of the ten top producers in the U.S. of book paper.

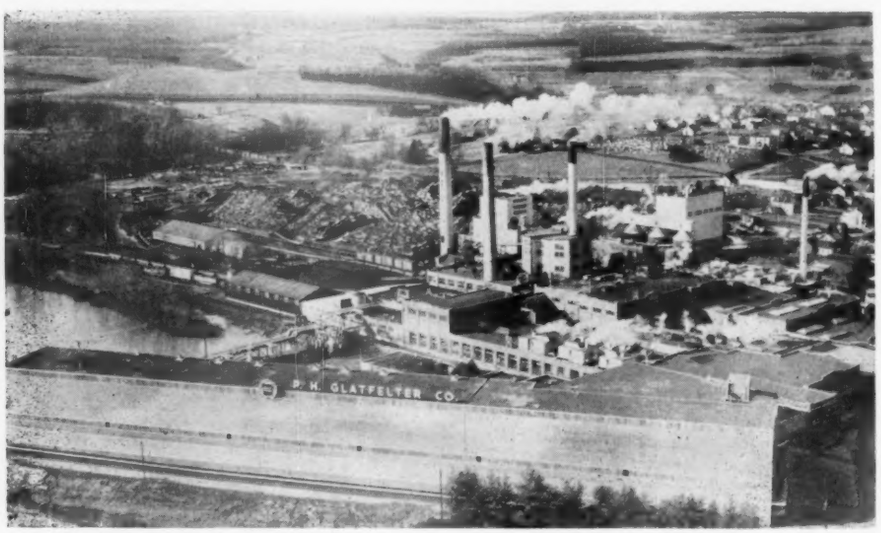
He said Allied soon will have converted the A.P.W. mill in Albany to rotogravure and catalog paper production from toweling and toilet tissue. He said it could make newsprint if desired. It was taken over at 25% of its depreciated replacement value, he said.

In 1957, Mr. Maremont predicted, the four Allied mills, including A.P.W. with 25,000 tons, will produce a total of about 175,000 tons of paper. Three Allied mills in Kalamazoo made 110,000 tons in 1956. He predicted that sales of all Allied divisions will total $55,000,000 in 1957 as compared with $41,000,000 in 1956. Actual earnings were about $10.50 a share in 1956. In 1957, he said earnings would be $7½ to $8 after taxes as there will be no tax carry forward. But by 1960, they should reach $11 to $12 a share, he said.

**END**



**Now for Book Paper, Speed and Suction Pick-Up . . .**




**For Glatfelter, 150 Tons More a Day . . .**

# Features of a New Book Paper Mill

## How Glatfelter departs from tradition, seeks way to better production with push buttons and uniform product flow

Spring Grove, Pa. ● In a spectacular 600-ft.-long building of brick, aluminum and translucent plastic, a major departure from traditional book papermaking is underway. Needless to say, the book paper industry is keenly interested.

Here, in Pennsylvania Dutch country, where the P. H. Glatfelter Co. has a well-earned reputation for doing many things well, a new 188-in. Rice-Barton paper machine has started up. With its production, Glatfelter hopes to prove that better book papers can be made by a careful selection of modern equipment, some of which is not ordinarily used for book paper production.

It was 93 years ago that the founder, P. H. Glatfelter, bought a one-ton a day mill here in Spring Grove for $12,000. Today, under the fourth generation Glatfelter, President Philip H. Glatfelter III, the company

has invested some $12,500,000 in this most recent phase of expansion and upgrading of products.

It was barely three years ago that Glatfelter completed the final $4,000,000 phase of a $7,500,000 program. It included a new kraft pulp mill and a shift to the Solvay process of chlorine dioxide bleaching, the latter for better brightness. The shift from soda to kraft was made for improved strength and better yield (PULP & PAPER, Dec. 1954).

**Features of New Paper Mill:**

These are:

1. The 188-in. Rice-Barton machine is said to be the first attempt by the book paper industry to use high speed and suction pick-up.

2. No beaters are used in stock preparation. Instead, all refining is continuous. Primary refining is by three E. D. Jones disc refiners; final touch-up by two Jones conventional jordans.

3. Stock inlet is of new design. Called a Rice-Barton flow spreader, it uses a multiple-nozzle tapered header and electronic flow meters and control valves to insure an even distribution of flow.

4. Minimum hand labor is effected by a complete broke recovery system using four conveyors.

5. Finishing, storage and shipping incorporate a high degree of mechanical handling equipment to minimize labor costs and to insure constant flow through various finishing operations to point of shipment.

6. A recently developed mounting system for the Farrel roll grinder isolates the grinder from all externally caused vibrations and shocks to insure high-quality grinding. Grinder is mounted on a massive block floating on heavy coil springs.

7. Unusual feature of the open pipe bridge is that pipes are grouped and enclosed in insulated aluminum housings of inverted U-shape, rather than being insulated individually. Results: Saving in first cost, and marked improvement in appearance.

8. All power wiring is multi-conductor cable in trays.

9. Modern industrial architecture takes a bow for machine building. Corrugated aluminum and green translucent plastic, used with conventional brick in contrasting bands, add visual length to the already lengthy building.

**Building Features . . .**

The corrugated aluminum curtain walls are double, with Fiberglas insulation between aluminum sheets, forming an insulating sandwich of permanence and light weight.

The plastic bands give natural illumination softened and dispersed and are pierced at convenient intervals by framed glass vision panels.

Bolted for economy and rigidity, the frame was erected without the usual ear-splitting racket of riveters and in considerably less time than possible by the older method.

The new 300 tons per day mill was designed by the J. E. Sirrine Co. F. G. Wilson was project engineer.

**Flow of Operation . . .**

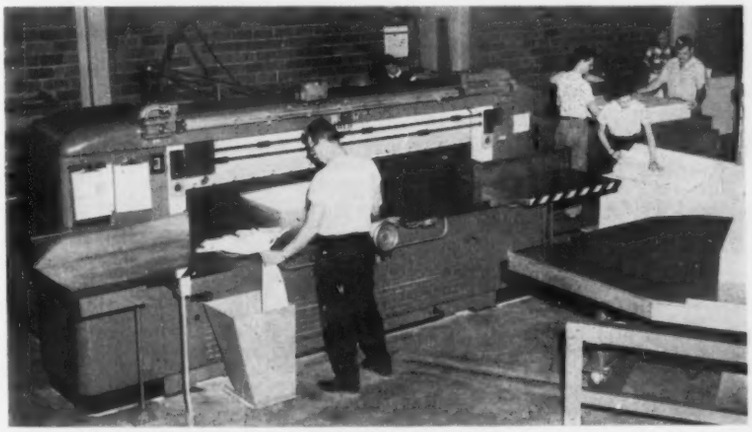
Process flow from the primary refiners is to a proportioning-metering system combining positive displacement and variable-orifice type meters. These meters are part of an integrated, automatic system which controls the flow of all components of the furnish, including sizes, fillers, dyes and alum.

To minimize fresh water consumption and waste effluent, a high capacity white water Sveen-Pedersen flotation-type saveall takes all white water from the machine. Clarified effluent is used wherever possible instead of fresh water.

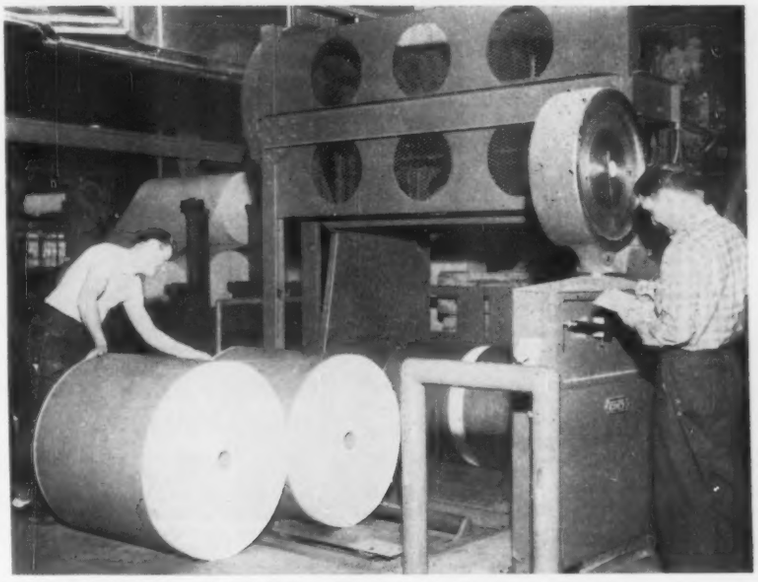
At the suction of the Bauer Centri-Cleaner supply pump, stock from the jordans is added to white water from the machine and the dilute mixture pumped through the Centri-Cleaners to the paper machine screens.

Secondary and tertiary Centri-Cleaners take primary and screen rejects. The four screens discharge to a common trough and deaerating chamber which in turn discharges to the variable speed fan pump supplying the paper machine inlet.

The Rice-Barton flow spreader is followed by a removable 188-in. Four-



**Finishing: Finger-Tip Controls and Less Labor**



**Roll Wrapping: Smoother production with More Smiles**

**Shipping Dock: Saw-tooth Design for Best Space Use**

drinier in which dual breast rolls replace the usual forming board.

The Rice-Barton paper machine is designed for a speed variable from 500 fpm to 2,000 fpm. Initial operation is at 1,500 fpm. The Fourdrinier is 188-in. wide by 130 ft. long and is supported by 44 table rolls.

Nine Standardaire vacuum pumps, by Read-Standard (now a division of Capitol Products Corp.), service the suction boxes, suction couch, suction pick-up, transfer press, first press, inverse second press, suction wringer and Bird Machine Co. felt conditioners.

The Standardaire is essentially a dry-type pump, requiring a small quantity of water to be injected to control temperature.

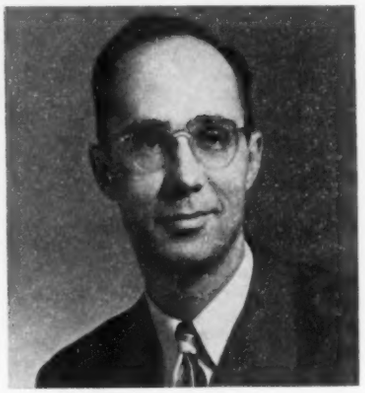
There are eight stainless steel suction boxes; each mounted on vertical leaf springs to permit oscillation. A hydraulic cylinder controlled by trip valves to adjust the amplitude imparts a rocking motion.

### Major Contractors and Suppliers

*Engineers:* J. E. Sirrine Co.
*Equipment erection:* Eichleay Corp.
*General contractors:* R. S. Noonan Co.
*Piling:* Raymond Concrete Pile Co.
*Aluminum, plastic siding:* Elwin G. Smith Co.
*Stock cleaners:* Bauer Bros. Co.
*Consistency regulators,* valves: DeZurik Corp.
*Controllers and flow meters:* Fischer & Porter Co.
*Instrumentation:* The Foxboro Co.
*Stock and water pumps:* Frederick Iron & Steel Co.
*Helper drive for machine and other electrical equipment:* General Electric Co.
*Layboy cutter and backstand:* Hamblet Machine Co.
*Trimming press:* Harris-Seybold Co.
*Air compressors and receivers:* Ingersoll-Rand Co.
*Refiners, jordans, repulper, agitators, broke system, screens:* E. D. Jones & Sons Co.
*Roll and sheet handling system:* Lamb-Grays Harbor Co.
*Rewinders:* Samuel M. Langston Co.
*Roll grinder:* Lobdell United Div., United Eng. & Fdry. Co.
*Vacuum pumps, separators:* Read Standard Div., Capitol Products Corp.
*Cranes:* Reading Crane & Hoist Corp.
*Paper machine, winder, differential drive:* Rice Barton Corp.
*Heating and ventilating systems:* J. O. Ross Engineering Corp.
*Dryer drainage system:* Stamm Drying Controls
*Tile chests and linings:* Stebbins Engineering & Mfg. Co.
*Saveall:* Sveen-Pedersen Sales Corp.
*Metering and proportioning systems:* Trimbey Machines, Inc.
*Roll header:* Valley Iron Works
*Consistency and volume control:* A. P. Wagenknecht Co.
*Motors, controls, machine turbine:* Westinghouse Electric Corp.

## Big Generator to Longview

The largest capacity electric power generating machine ever ordered by a Northwestern U. S. pulp and paper maker was recently shipped by General Electric to Longview Fibre Co. Rated at 20,000 kw, electricity from the unit will operate motors to drive pulp and paper mill equipment. Steam turbine is of the tandem, non-reheat type using steam at 800 psig at 750°F. Steam will be automatically extracted from turbine at 175 psig for the Longview Fibre Co.'s process operations.



## Murtfeldt Elected V.P.

HAROLD MURTFELDT, who was raised in the "Show Me" state of Missouri and is a graduate of St. Louis's Washington University, has been elected vice president of Consolidated Water Power & Paper Co. He continues in overall charge of its enamel paper sales, with headquarters in the Field Bldg., 135 So. LaSalle St., Chicago. In earlier years with Consolidated, he worked in the office at Wisconsin Rapids, Wis., where his brother, Larry W., is assistant mill mgr. Announcement of Harold's election was by President Stanton W. Mead. Harold Murtfeldt has been with Consolidated for 19 years. He began as an attorney for the company handling foreign and domestic licensing. He joined the sales staff in 1945. He took over his present duties as enamel paper sales manager, when Walter L. Mead retired in 1953.

## Leads All Mead Mills

George H. Mead safety trophy is presented by HERBERT A. KIDD (second from left), vice pres. of Mead Corp. and vice pres. and gen. mgr. of Georgia Kraft Co., to JAMES A. MAY, res. mgr. of Georgia Kraft in Macon. At left is W. M. SLOAN JR., safety supervisor for Georgia Kraft, and at right, G. S. GIBSON, industrial relations manager. Georgia Kraft operated through 1956 without a disabling injury for the best record for all fully or partially-owned Mead mills and now have over two million man-hours since the last lost-time injury. According to the National Safety Council, these are the most consecutive man-hours worked without a disabling injury ever amassed by a mill of this type.

# To Use Rotary Pulp Dryer

• Waldorf Paper Products Corp. has developed a rotary pulp dryer for use in a new 250-ton kraft noodle pulp mill now being built on Clark Fork River near Missoula, Mont. The dryer is said to reduce moisture content of pulp from approximately 80% as it comes from the washer, to 15% as it leaves the dryer.

Another innovation will be use of a baler, similar to that used for raw cotton, which will compress the nodular pulp to a density of about 45 lbs./cu. ft., permitting 80,000 to 100,000 lbs. to be loaded in a single freight car. This makes it economically feasible to move pulp about 1,000 miles by rail to Waldorf's St. Paul, Minn., mills, to make liner board.

The plant will use fir, spruce, pine and larch chips from eight or more sawmills, providing a market for lumber byproducts ordinarily considered waste. One supplier, Intermountain Lumber Co., reports it may select a mechanical ring barker and one of the new type chippers. Anaconda Co. Lumber Dept., another source, has chosen a Hansel oscillating hydraulic barker and Hansel horizontal chippers.

Dr. Paul Trout, chief chemist for the Waldorf firm, said purchases would be made in units of 2,400 lbs. of chips. These will be delivered by rail and trucks and stored, according to variety of tree, in 50-ft. stacks prior to chemical processing which will produce pulp and byproducts such as turpentine.

Nels Sandberg, executive vice president of Waldorf Paper, said latest engineering and chemistry developments used in the new plant will prevent any river pollution.

# Progress on Upper Michigan NSSC Mill

The Huss Ontonagon Pulp and Paper Co., formed last spring by Alvin Huss, president of the firm, should start producing NSSC corrugating medium this summer at its new plant, formerly the National Container mill, at Ontonagon, Mich. Newton Cuneo is plant manager, Merlin King, chief engineer, and Erith Hopp, woodlands manager, of the new mill.

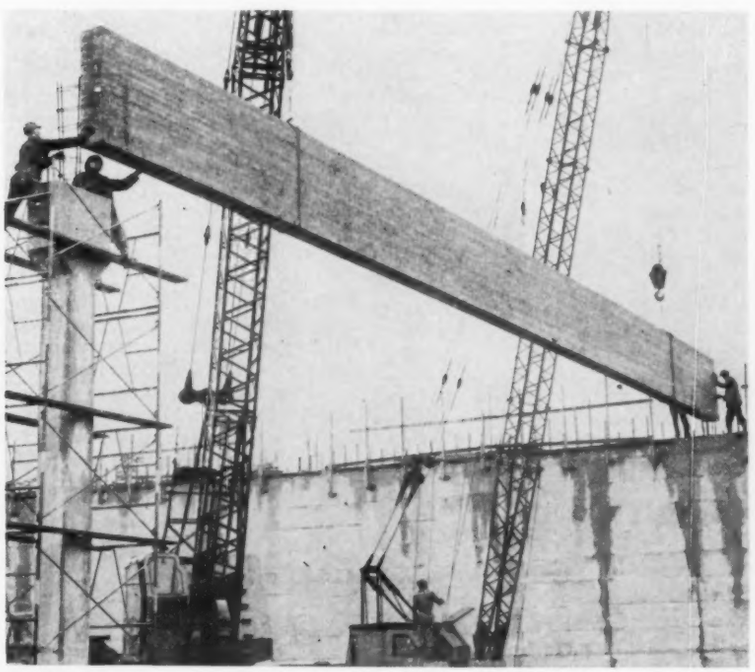
Mr. Huss has been in the lumber business for over 30 years, starting as an office boy for Hill-Behan Lumber Co. of St. Louis while attending Washington Univ. After graduation he worked first as a secretary and later as wholesale buyer and salesman for that firm. In 1932 he started Huss Lumber Co. of Chicago and is still its president. Creation of Huss Ontonagon Pulp and Paper Co. implements a belief long held by Mr. Huss that the lumber and pulp and paper industries should be more closely allied.

A new Pandia neutral sulfite semi-chemical continuous digester with Westinghouse sectional drive, six section reaction chamber with screw feeder and drive, and American Defibrator Model D for discharging to blow tank, will be run at pressures approximating 200 psig steam at the new plant. A P&H bridge crane with additional controls and magnetic equipment is now being operated to erect the new 176-in. Pusey & Jones Fourdrinier machine in a building recently closed in.

The mill will also use new Sprout-Waldron 36-in. disc refiners for hot stock refining, and Swenson 9 ft. diameter by 12 ft. single drum two-stage pulp washers. Five E. D. Jones Majestic jordans have been completely rebuilt for secondary refining.

The existing quadruple effect Conkey evaporators and a new Combustion Engineering black liquor fuel oil recovery unit will provide steam rated at 44,000 pph at 650 psig and 700 degrees ftt, reduced to 150 psig through a Westinghouse 1000 kilowatt .0.8 p.f. 440 volt, 3600 rpm non-condensing turbine generator set. Equipment retained in the mill also includes Oliver deckers, Bauer double disc refiners, and components that had been adapted to the kraft operation and are now converted for NSSC.

A new Orton diesel crane with a 55 ft. boom and two steam locomotive cranes are receiving pulpwood at an average daily rate of over 200 cords of high density hardwoods.



**Big Beam for New Pulp Mill**

Enough wood to build 4-room house is in this 80 ft. Multi-laminated structural fir beam, produced by American Pre-Fabricators, for $42,000,000 market pulp mill at Crofton, Vancouver Island. Dominion Engineering cranes work with crews.

## New Booklet on Duties of Mill Supervisors

The foreman—as a supervisor skilled in human relations—holds the master key which will unlock greater productivity, says National Assn. of Manufacturers in a new booklet "Improving Human Relations," which presents an action program designed to help top management develop better supervisor-employe relations. It says success of a company "rests heavily on how well the management group performs in achieving person-to-person understanding." It emphasizes that the supervisor must "listen" to employes and understand their needs and wants. Copies, 50¢, are available from NAM Employe Relations Dept., 2 East 48th St., New York 17, N.Y.

A PROBLEM OF KRAFT MILLS ON TIDEWATER . . .

# How to Eliminate Salt from Recovery Systems

By R. H. WRIGHT*

● When wood which has been floated in salt water is subsequently pulped by the kraft process, sodium chloride which has been taken up from the sea water is released from the wood and tends to accumulate in the recovery system where it constitutes an inert load.

From time to time it has been suggested that if an economical way of eliminating this salt were developed it would have considerable value to the kraft pulping industry. In what follows an attempt will be made to survey the problem in general terms so that the most promising avenues may be selected for attack.

Following are the points in the process at which salt might be eliminated:

1. The liquor—Green, white or black.
2. The smelt.
3. The precipitator salt cake.

The following are the various types of process which might be employed for the removal of salt:

**1. Processes Depending on Phase Equilibria . . .**

(a) Processes in which sodium chloride is separated as a solid and a liquid phase is returned to the system.

(b) Processes in which a liquid phase is enriched in sodium chloride and discarded and a solid residue is returned to the system.

Note: The above are primarily applicable to the liquor or the precipitator salt cake.

(c) Processes involving the separation of two liquid phases. Primarily applicable to the smelt.

Investigation of the above possibilities would depend on the study of the phase equilibria of the following systems:

1. Sodium chloride, sodium carbonate, sodium sulfate, water.
2. Sodium chloride, sodium sulfide, sodium carbonate, water.
3. Sodium chloride, sodium sulfide, sodium hydroxide, water.
4. Sodium chloride, sodium sulfide, sodium carbonate (at high temperature).

A preliminary search of the literature revealed useful data covering the first of these systems.

A successful process based on phase equilibria would make use of largely conventional plant equipment and the technical skill required for operation would be similar to that at present required in the recausticizing plant. On the other hand the power or water demand might be considerable since the process might involve the evaporation of water or large adjustments in temperature. The heavy demand for power or heat might be avoided by a selective leaching process applicable to the precipitator salt cake.

Any process involving the separation of two liquid phases would be confined to an operation on the molten smelt leaving the recovery furnace before it enters the green liquor dissolving tank. Such an operation would be attended by many difficulties and hazards and may therefore be set aside for the time being. The use of a low temperature process involving aqueous and non-aqueous solvents may be ruled out also for the time being on the score of cost.

R. H. WRIGHT—"For precipitator salt cake containing 10%-20% NaCl, a simple washing. . . ."

**2. Process Depending on Chemical Precipitation . . .**

Since the fundamental problem is primarily the removal of chloride ion, chemical precipitation of an insoluble chloride by some reagent would be a very simple and attractive solution. The possibility of locating a suitable precipitant does not appear very great. Among the inorganic cations only those of silver, lead, monovalent mercury and thallium are sparingly soluble. The use of an organic precipitant would probably be prohibitively expensive.

An alternative process in which sulfide and carbonate (or hydroxide) ions were precipitated leaving chloride in solution to be discarded would be easier to achieve but might be expected to consume an enormous amount of reagent. However this possibility might be followed up in a limited way during a literature survey.

**3. Processes Depending on Ion Exchange . . .**

An ion exchange process in which chloride ions were selectively removed by an exchange material capable of being regenerated would undoubtedly constitute the most elegant of all solutions. However the possibility of finding an exchange material capable of removing chloride selectively from an alkaline solution containing sulfide, sulfate and perhaps carbonate does not appear too good. Inquiries should be sent to manufacturers of ion exchange resins, etc. If no suitable material is at present available it would probably require very extensive and systematic experimentation to develop one.

The alternative procedure in which other ions were removed leaving a solution of sodium chloride to be discarded hardly appears feasible in view of the quantities involved.

**4. Processes Depending On Electrolytic Action . . .**

Selective electro deposition of chloride from an aqueous alkaline solution containing carbonate or sulfate would not be possible except at very low current efficiency which would be still further reduced as the concentration of chloride fell to the desired low value.

The alternative of an electrolytic process applied to the molten smelt might, if successful, give a greater current efficiency but at the cost of many technical difficulties including the hazards involved in handling the free sodium discharged at the cathode.

**5. Processes Depending on Diffusion . . .**

Many biological processes involve

*Head, Division of Chemistry, British Columbia Research Council. He outlined these possible ways of solving the seawater problem in kraft mills at a recent meeting of Technical Section, Western Branch, Canadian Pulp and Paper Assn.

the selective excretion or assimilation of ions by means of diffusion through membranes. The possibility exists that a process based on the Donnan equilibrium could be devised for the selective removal of chloride from the green or white, or possibly even the black liquor. Assuming that the optimum operating conditions were established, many technical difficulties would still remain, not least of them being the production and maintenance of a large area of membrane.

No more than a preliminary examination of the thermodynamic possibilities of such a process would be justified at this time.

**6. Processes involving the removal of chlorine as a gas . . .**

Free chlorine is a gaseous substance but since the formation of chlorine from sodium chloride involves an oxidation reaction it is unlikely that any process can be devised that will oxidize the chloride without at the same time oxidizing the sodium sulfide in the material.

There are however a number of volatile chlorine compounds which might be formed by such metathetical reactions as:

$$CS_2 + 4NaCl = CCl_4 + 2Na_2S$$

Reactions of this type would be primarily applicable to the molten smelt and would not involve as extensive an installation as would be required in the other processes. Operating costs apart from chemicals would also tend to be small.

**Most Promising Methods . . .**

Taking everything into account, the most promising possibilities appear to lie in the direction either of processes depending on phase equilibria or of processes depending on the formation of a gaseous chlorine compound.

A study of the four-component system—sodium chloride, sodium carbonate, sodium sulfate, water—showed that for precipitator salt cake containing 10% to 20% NaCl, a simple washing with slightly less than its own weight of water would dissolve away substantially all the sodium chloride, and about half the sodium carbonate and leave more than 90% of the sodium sulfate behind as solid.

It will be apparent from the foregoing that this problem is not likely to find a quick and easy solution. A considerable amount of basic scientific work must underlie any successful process. Before further studies of the problem are undertaken it is necessary that the industry provide a clear indication of the importance of the problem and the amount of the processing costs that would be acceptable.

# A Funny Mill Paper Does a Serious Job

Jack V. Savage, sulfite mill supt. at Crown Z's Camas, Wash. plant, makes effective use of an unusual "daily newspaper" to keep members of his department cooperatively alerted to problems, conditions and accomplishments. It is called *The Sulfite Slander Sheet*.

Its two columns of news, hints, pleas, reports, warnings, congratulations and humor have developed the sort of avid readership that publishers strive for.

The Research Institute of America, in recognition of the effectiveness of Mr. Savage's printed vehicle, presented a merit award to Crown Zellerbach Corp. This came as the result of considering nearly 30,000 entries and was one of 202 awards for "unique contribution to the development of executive skills in human relations and manpower utilization."

Typical quotes from "The Sheet":

"When the editor saw the contractor installing an instrument panel right in front of an existing one in the sulfite bleach plant, he was soothed by the promise that the old one would be consolidated in the new panel. Well, old P. T. Barnum was right."

* * *

"C shift screened 149.8 tons one shift last week. That would be 449 tons per 24 hours. C shift was also the only Kamyr shift to produce at 100 tons per day rate any shift during the week. They are either good, lucky, or the decimal is in the wrong place. . . ."

**JACK V. SAVAGE,** Sulfite Mill Supt. of Crown Z Camas plant, with Research Institute award received in recognition of accomplishments through his daily bulletin.

* * *

"Keep your temper! No one else wants it. . . ."

* * *

"Let's not have any more horseplay with the hi-lift truck. Someone is apt to end up up-ended. . . ."

* * *

"Science is wonderful. It could not open the Pullman windows, so it air-conditioned the train."

# Wisconsin Paper Group Elects

Carl A. Schiebler, general sales manager of Nekoosa-Edwards Paper Co., Port Edwards, Wis., was elected president of the Wisconsin Paper Group for 1957. John H. Wilterding, vice president of George Banta Co., Inc., Menasha, Wis. is the new vice president.

On the executive committee, new members Vinson Krapfel, Consolidated Water Power and Paper Co., Wisconsin Rapids, and Thomas Leech, Whiting-Plover Paper Co., will serve with re-elected members Charles N. Egan, Shawano Paper Mills, Green Bay; Douglas G. Hyde, Marathon Corp., Menasha; R. W. Mahony, Appleton Coated Paper Co., Appleton; G. E. McCorison, Thilmany Pulp & Paper Co., Kaukauna; W. L. Thornton Jr., Kimberly-Clark Corp., Neenah; and W. J. Van Dyck, Badger Paper Mills, Inc., Peshtigo. Leo O. Schubart, president, Neenah Paper Co., continues as secretary-treasurer, and Irwin Pearson as executive secretary, both for the 24th year.

Wisconsin paper manufacturers and converters started the Wisconsin Paper Group 23 years ago as a non-profit organization providing scheduled pool carload delivery service. About 5,000 less-than-carload orders are shipped each month in pool carloads at the actual carload freight rate, on regular, dated, dependable schedule to customers in the 75 principal paper distribution markets in the U.S.

**New Duties in Shipping Body**

(L to r) CARL A. SCHIEBLER, Nekoosa-Edwards, is new president of Wisconsin Paper Group, and THOMAS LEECH, Whiting-Plover, and VINSON KRAPFEL, Consolidated Water Power & Paper, are new executive committeemen.

## PICTURES OF PEOPLE IN THE NEWS

### New Faces in New Posts

J. R. ATWATER (left), formerly with The Mead Corp., is now assistant to the president, P. H. Glatfelter Co. He's a graduate of Syracuse U., had been with Mead 27 years, and during World War II represented pulp and paper industry with OPA.

CARL W. EURENIUS (right), assistant general mgr., of Hercules Powder Co's. Cellulose Products Dept., has been named assistant general mgr. of its Paper Makers Chemical Dept. WERNER C. BROWN, Director of Sales for CPD, succeeds him.

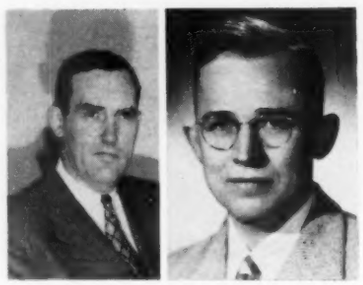
### New Appointments

W. E. WATSON (left) is new general plant manager, Beloit Iron Works, announce H. C. Moore, president, and W. S. Wood, vice pres. of mfg. Mr. Watson has 18 years management experience in manufacturing and production. WILLIAM C. McCLURE (right) has been appointed field assistant to the sales manager for F. C. Huyck & Sons, manufacturer of papermaker's felts. He is an engineering graduate of Lafayette College, has been with Huyck since 1951.

### New Executives

JOHN W. LITTLE (left) is new President of Goslin-Birmingham Mfg. Co., succeeding Joseph T. Hartson, retired.

LESTER B. GORDON, (right) Vice Pres., Solvay Process Div., Allied Chemical & Dye Corp.; heads up the Solvay sales organization. He has a ch.e. degree from N.Y.U. He succeeds Harold F. Merritt, who has retired.



### New Posts in Mid- & Far West

G. E. "SLIM" SEAVOY (left), vice pres. in charge of sales at Whiting Corp., Harvey, Ill., has been assigned additional duties directing all marketing activities. The product lines involved, in addition to Swenson evaporators and washers, are material handling (cranes and trambeam), foundry and metallurgical equipment (cupolas, electric furnaces, pulverizers), railroad maintenance equipment (drop tables, jacks, car washers), and Trackmobiles. Mr. Seavoy is widely known in the pulp and paper industry.

WILLIAM W. CLARKE (right), gen supt. of Longview Fibre Co., Longview, Wash., has been promoted to asst. resident mgr. succeeding Carl Fahlstrom, it was announced by R. S. Wertheimer, vice pres. and resident mgr. Mr. Fahlstrom, retiring after nearly 30 years with the firm, will a available on a consulting basis until July 1.

### In Top Posts for New Mills

WILLIAM J. SHELTON (left), has been elected vice president of Georgia-Pacific Paper Co., announces H. S. Daniels, president. Mr. Shelton was supt. of pulp and paper manufacture for Longview Fibre Co. before joining Georgia-Pacific last March as resident manager of new 250 ton kraft pulp and paper mill being built at Toledo, Oregon. Mr. Shelton has purchased a home in nearby Newport. The mill will be completed in about a year's time.

FRANK M. JOHNSON has been appointed general sales manager for Dierks Paper Co., division of Dierks Forests, Inc. The new kraft paper mill at Pine Bluff, Ark., is scheduled to start up in September. Mr. Johnson was sales manager for Brown Paper Mill Co., Inc. of West Monroe, La., before its purchase by Olin Mathieson Chemical Corp. His offices will be at Hot Springs, Ark.

### Serve West and East

ROBERT D. BAER (left), of Portland, Ore., formerly with Griffith Rubber Mills, has joined F. C. Huyck & Sons' field service engineering staff on the West Coast. An alumnus of the U. of Oregon, he has spent some 10 years with the West Coast paper industry.

RUSSELL A. JENSON (right), with F. C. Huyck before a tour of duty with U.S. Army in Germany, rejoins Huyck for assignment in New York and adjoining areas. He's m.e. grad of Georgia Institute of Technology, previously was with IP's Southern Kraft Div., St. Mary's Kraft Corp. and Tidewater Construction Co.

### Names Barlament V.P.; Allen Thuerer Honored

LEE R. BARLAMENT (left) technical director, has been elected manufacturing vice president of Appleton Woolen Mills, Appleton, Wis. He is a graduate of the Philadelphia Textile School, joined Appleton Woolen Mills in 1923 and was formerly assistant mill supt. Albert H. Wickesburg, chairman; and F. H. Orbison, president, were re-elected. ALLEN H. THUERER (right) re-elected secretary, was presented with a bronze plaque recognizing his 46 years' service at the company's annual meeting. He also attended Philadelphia Textile School, joining Appleton Woolen Mills as asst. mill supt. in 1910.

WILLIAM S. SHIRES a graduate with a b.s. in textile engineering from Lowell Engineering, has been named Felt Service Engineer for Albany Felt Co.

### West Coast's (U.S.) 20 "Safest Mills"—1955-1956

| | 1955 | 1956 | |
|---|---|---|---|
| | Freq. Rate | Man Hrs. Exposure | Freq. Rate |
| 1. Crown Zellerbach Corp. Port Townsend, Wash. | 1.90 | 1,649,151 | 0 |
| 2. Longview Fibre Co. Longview, Wash. | 5.22 | 3,627,015 | 1.10 |
| 3. Simpson Paper Co. Everett, Wash. | 3.60 | 1,829,244 | 1.64 |
| 4. Crown Zellerbach Corp. Port Angeles, Wash. | 8.13 | 1,395,853 | 2.15 |
| 5. Rayonier Inc. Shelton Div., Shelton, Wash. | 2.17 | 853,757 | 2.34 |
| 6. Crown Zellerbach Corp. Lebanon, Ore. | 10.78 | 411,716 | 2.43 |
| 7. Weyerhaeuser Pulp Div. Everett, Wash. | 2.99 | 1,340,401 | 2.98 |
| 8. Weyerhaeuser Pulp Div. Springfield, Ore. | 4.56 | 657,027 | 3.04 |
| 9. Puget Sound Pulp & Timber Co. Bellingham, Wash. | 3.22 | 952,318 | 3.15 |
| 10. Fibreboard Paper Products Corp. Sumner, Wash. | 8.64 | 627,426 | 3.19 |
| 11. Crown Zellerbach Corp. San Leandro, Calif. | 18.12 | 590,155 | 3.39 |
| 12. Crown Zellerbach Corp. Camas, Wash. | 4.87 | 5,188,034 | 3.47 |
| 13. Rayonier, Inc. Olympic Div., Shelton, Wash. | 0 | 277,077 | 3.61 |
| 14. Potlatch Forests, Inc. Pomona, Calif. | 2.66 | 764,964 | 3.92 |
| 15. Fibreboard Paper Products Corp. South Gate, Calif. | 13.76 | 686,381 | 4.37 |
| 16. Crown Zellerbach Corp. Antioch, Calif. | Not operating | 214,599 | 4.66 |
| 17. Rayonier, Inc. Hoquiam, Wash. | 8.77 | 1,647,620 | 4.86 |
| 18. Scott Paper Co. Everett, Wash. | 6.00 | 3,207,083 | 4.99 |
| 19. Crown Zellerbach Corp. Los Angeles, Calif. | 0 | 559,442 | 5.36 |
| 20. Weyerhaeuser Pulp Div. Longview, Wash. | 7.13 | 2,143,558 | 5.60 |

# Disabling "Accidents: Zero"

## Port Townsend is "safest Coast mill"

• A perfect record of no lost-time disabling accidents in 1956 gave Crown Zellerbach's 450 ton per day kraft mill at Port Townsend, Wash., top honors for all Pacific Coast pulp and paper mills (U.S.A.).

The perfect record for the Port Townsend mill began in 1955 and on Feb. 10 the mill had passed the 600-day mark with the record of no disabling accidents still intact. This was equivalent to a remarkable record of over 2,640,000 man-hours without a disabling injury.

Rayonier Inc.'s Olympic division at Shelton, Wash., Weyerhaeuser's Pulp Div., Springfield, Ore., and Container Corp. of America, Los Angeles, each receive awards for their respective states for the best five-year records in the Pacific Coast Assn. of Pulp & Paper Manufacturers. Out of 43 coast mills, 20 lowered their accident frequency rate in 1956 as compared to 1955.

Perhaps the fine esprit de corps and teamwork developed under the leadership of Resident Manager F. Leonard "Leo" Ziel (PULP & PAPER, Nov. 1956, page 78) are factors in the excellent safety record the Port Townsend mill has maintained for the past several years—psychologists suspect that accident-prone employes are unhappy ones.

Other leaders of the team that chalked up a perfect record at Port Townsend include John M. Miller, asst. resident mgr., Bob Miller, who recently took over as personnel and safety supervisor, and his predecessor, William Anderson (now at Camas), Neal Franklin and William S. Hibbard, assistant personnel and safety supervisors.

Here are charts showing the safety records of the 20 "safest" mills in California, Oregon and Washington, and a comparative summary by states for the calendar years 1955 and '56.

### Ohio to Have First 4-Year Paper Course

The first four-year course in the chemistry of papermaking to be offered in Ohio will be started at Miami University next September. Miami agreed to undertake the course with financial support from industry. This followed a meeting attended by 27 officials of 17 Ohio pulp and paper concerns, sponsored by Ohio TAPPI.

Industry will supply specialized equipment, scholarships, summer employment for trainees, cooperation in attracting talent and advice in the program. Miami provides faculty and classroom-laboratory space. First graduates in 1961 will receive a bachelor of science degree with a major in chemistry of papermaking.

Details of industry support are to be worked out by industry "task groups."

A steering committee includes Dwight J. Thomson, Champion Paper & Fibre Co.; George McCrea, The Mead Corp., and Philip S. Cade, Harding-Jones Paper Co.

### Summary by States—1955 and 1956

| 1956 Rank | State & No. of Mills | 1955 Freq. Rate | 1956 Man Hours Exposure | 1956 Freq. Rate | 1956 % Change |
|---|---|---|---|---|---|
| 1 | Washington (21) | 5.29 | 27,925,724 | 4.20 | —21% |
| 2 | Oregon (8) | 8.80 | 8,101,989 | 8.27 | — 6 |
| 3 | California (14) | 9.19 | 11,196,210 | 9.02 | — 2 |
| | TOTAL ALL MILLS (43) | 6.79 | 47,223,923 | 6.04 | —11 |

**Papermaking Kit—Useful for Speakers**

W. J. BREECE (left), holds tiny mold. MAX BARDEEN (right), an admirer. Says he made papermaking kits for each of five children—none as good as Scott's.

**Another Scott Kit—Helps Speakers, Too**

Any paper industry execs or supervisors called on to make speeches might find this file kit a useful aid. Story tells what Scott puts in it.

# Supervisor-Spokesmen—Scott Project

## "Better than 100 press releases." Michigan p.r.men bat around ideas, get into hassle over how to edit a paper.

• An attempt in Michigan to launch community relations "workshops" such as have proved so successful in other papermaking regions made up in spirited discussion for what it lacked in attendance. First meeting of its kind in Michigan since a previous abortive attempt in 1952, was held in Kalamazoo, Jan. 14, sponsored by the American Paper & Pulp Assn.

Only top management man in attendance was Maxwell D. Bardeen, president of Lee Paper Co., Vicksburg, and he was chairman. But p.r. men and personnel staff men from a number of mills managed to whip up a mild argument or two (maybe because management wasn't there). However, in Wisconsin, the mid-Atlantic region, the South and other areas where these "workshops" have been most successful, top management participation has always been regarded as essential to put them over.

A Scott Paper Co. decision to place most of its community relations eggs in one basket—volunteer amateur speakers for clubs, etc., from supervisory ranks—was perhaps the most significant idea put forth in Kalamazoo. A Scott spokesman asserted: "Press releases and printed material will never do as much for us as our new speakers' program." More, on this later. . . .

### 'Company' vs. 'Employe' Paper . . .

A controversial topic bobbed up over the terms: "company" publication vs. "employe" publications.

One p.r. man asked for advice on how to start a "company publication" and get over the story of a "company" victory in a union election. A Scott man warned:

"Don't ever start a 'company' publication. Edit it as an 'employe' publication. The employes are primarily interested in themselves. Companies are only bricks and mortar. The employes, not the company, won your election. But I wouldn't talk about the election, anyway."

Chairman Bardeen took a stand on different ground—he said his company's employes have a healthy interest in certain information about the company, particularly its program.

### What's Doing in Wisconsin . . .

In sharp contrast with what actually was taking place at the Michigan meeting, John McCune, first speaker, told how many top flight executives took part in development of community relations for mills in Wisconsin. Mr. McCune is employed as coordinator of their central agency, Information Service-Wisconsin Paper Industry, Neenah, Wis. Over the past ten years in Wisconsin, management men served on a board of directors and a steering committee, and especially in formative years, took a leading part in the Wisconsin Workshops, where skills were developed in "everything from TV production to writing news releases." Speakers expert in different phases of community relations were brought to the meetings.

Mr. McCune said reluctance to participate and indifference were attitudes in management that had to be overcome in Wisconsin.

"But today our statewide program is a recognized activity," he said. "As evidence of success, little facts which we first disseminated are now popping up in other people's speeches and writings."

A Beloit Iron Works 26 min. color sound movie, which can be purchased for $110, was recently premiered in

**"Wisconsin Looks Good on Paper"**

. . . it says on this attractive publicity map of Wisconsin mills. And LLOYD CAMPBELL (left), of Lee Paper, and JOHN McCUNE of Wisconsin, agree.

**"Paper for Modern Living"**

KVP sent 500 copies to schools, 700 to brokers, etc. MARSHALL RUTZ (left), KVP general supt., and FRANK SOUTHON, KVP p.r.man, inspect it.

Wisconsin Rapids and will be used first by some ten paper companies. The first film will be given to the state for use at school levels.

Every gas station in Wisconsin next summer will dispense litter bags printed "A Service of Wisconsin's Paper Industry." This represents an investment of $2,300. And 2,500 copies of a story of the Wisconsin paper industry has been distributed. Last summer the industry campaign to "Keep Wisconsin Safe, Clean and Beautiful" brought the industry in contact with 61 radio and TV stations and 45 dailies.

The Wisconsin group now plans a "Paper City" trailer, with models of a mill and town and machines in operation, to tour the state, educating thousands of youngsters and grownups.

### Scott's New Program . . .

Scott Paper Co. decided that "one good speech at a fraternal, service organization, Scouts or Y.M.C.A. meeting is worth 100 press releases." So it has launched a "speakers' program," focussed at plant level.

To assist, mill managers, supervisors and other employes to make these speeches Scott will provide various visual aids. These will include one of the most compact and effective papermaking demonstration kits yet devised, complete with tiny paper mold, wire, felt, a rolling pin dryer, etc., which is able to actually make a sheet of paper on which one can write. First of these Scott kits has been presented to the Detroit school system. A 15-min. full color film strip with commentary also will be provided the volunteer speakers from employe ranks.

W. J. Breece, personnel manager of Scott's Detroit division, praised D. A. Prouty, Scott's assistant vice president and p.r. director and his full time staff of seven p.r. men for developing this plan.

Speakers are being provided another Scott kit—a 'speakers' kit'—which includes mimeographed information of all kinds about the company, instructions on how to prepare a speech, copies of speeches by President T. B. McCabe and other officers, a guide to good speech topics, 'thought starters' and a booklet entitled 'Paper and Scott Paper Co.', which covers industry and company history, processes and outlook. A folding panel board with diagrams, etc., and cartoons also are provided.

"We think press stories and printed material could never do what this is going to do," said Mr. Breece. "Any company could adapt these ideas to their needs."

### Benefits from Scholarships . . .

Lloyd Campbell, director of industrial relations for Lee Paper Co., told how a modest scholarship program carried on by his company for the past seven years has paid off in many ways. There is a $100 award for each of eight semesters at Western Michigan College, only for those taking paper technology courses, and a similar $137.50 per semester award for Kalamazoo College, but with no strings attached as to courses taken.

"It gives us a chance to go into the schools, learn plans of youngsters, keep an eye on them, get acquainted with teachers, meet students parents and friends after they enter college," he said.

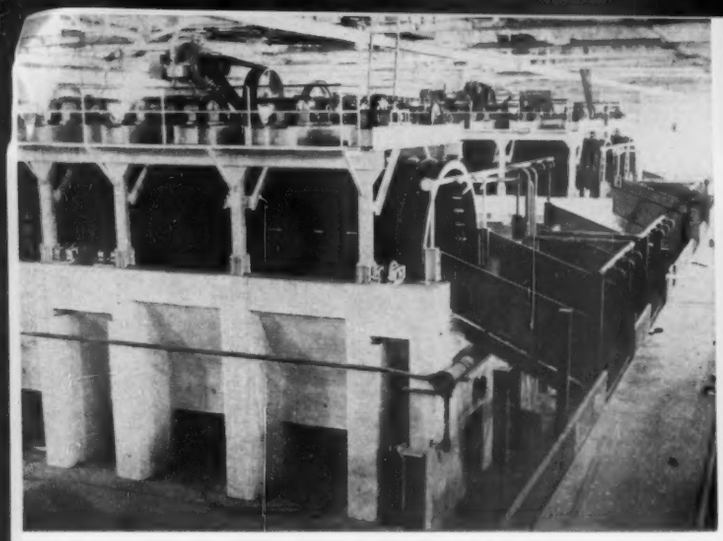
### KVP's Unorthodox Activities . . .

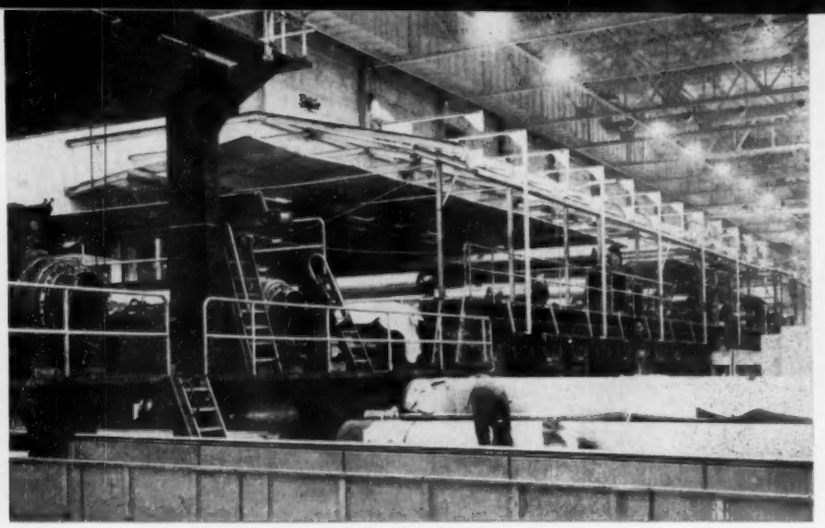
Unorthodox public and employe relations activities which have distinguished KVP Co. were described by Frank Southon, its mgr. of public and industrial relations and son of Alfred Southon, KVP board chairman. As background he told how KVP in recent years decided to withdraw all tangible support from the town of Parchment, model community created in 1910 by "Uncle Joe" Kindleberger, KVP founder. KVP gave the city a $250,000 community house and a park, and sold the city water mains, sewer lines and fire dept.

In 1952, KVP decided to quit printing a newspaper for the city of Parchment, competing as it was with the nearby Kalamazoo paper. Instead it launched an unusual company magazine—KVP "Log." The "Log" has artistic 4-color back and front covers, is 75% photos and only 25% copy, "talks about KVP people, plants and processes" and has reduced the personal "chit-chat" usually found in house organs to only two categories—weddings and retirements. It always carries something for housewives to read. Each issue costs $4,000. It is published every other month. Once it was published in French for Canadian employees. This was credited with winning their regular interest. Jerry Smith is editor.

The unique "KVP Philosopher," written and edited by Glenn Stewart, KVP ad manager, whose wise sayings, humor, etc., have been quoted by Readers' Digest and other magazines, is part of KVP's "old-fashioned approach" to advertising. Over 11,000 copies of each issue are mailed. Mottoes and monthly calendars also are distributed. Mr. Southon said these all were "extremely effective."

**END**





**New barkers go into Dryden woodroom . . . and new newsprint machine to Powell River, as . . .**

# Biggest Expansion Year in Canada Makes Talk in Montreal

## Also hot topic was role of U.S. investments . . . Fowler takes issue with Gordon report, says U.S. capital is needed

**By CHARLES L. SHAW**
**Canadian Editorial Director,**
**PULP & PAPER**

● What were they talking about at the big Montreal meeting in late January of Canadian Pulp and Paper Association? Many of the subjects discussed among the 1,500 delegates were pretty specific and technical, but others were basic and industry-wide.

There was talk of continuing expansion across Canada from coast to coast; of higher newsprint prices to meet rising costs; of the serious shortage of engineers and trained personnel, of new processing and equipment developments, of executive changes, and finally there was the Gordon Report, and its possibly widespread implications.

### What is Gordon Report? . . .

Several months ago the Canadian government decided it would be a good idea to make a thoroughgoing appraisal of the country's economy and to look into the future to assess the probable course of development over the next quarter century. W. L. Gordon, distinguished Canadian economist, headed a royal commission to undertake the inquiry. The final report was made public only a few days before the annual January meeting of the Canadian Pulp and Paper Association in Montreal.

The report, although bearing the signature of Mr. Gordon, was anything but a one-man task and document. The chairman leaned heavily on other Canadians, some leaders in diverse fields, for his final analysis, and requested reports from 250 individual companies. Among the pulp and paper companies represented were Abitibi Power & Paper Co., Alaska Pine & Cellulose and other representative organizations such as the Pulp and Paper Research Institute and CPPA itself. In some instances the final report was in rather striking contrasts to the advice presented.

One of the most controversial passages deals with the question of U.S. financing of Canadian industry, and it is suggested that over the years Canadian investors should seek a greater measure of control of industry operating in Canada. (*See Robert M. Fowler's comment later in this article.*)

This could have a vital bearing on pulp and paper because American investment in Canadian mills and pulpwood holdings is substantial and only within the past two or three years such companies as Rayonier, Scott, Crown Zellerbach, St. Regis and Celanese Corp. of America, to mention only a few, have greatly increased their financial interest in the Canadian industry.

But, as everyone in the industry recognizes, this has not necessarily been dictated by self-interest but by the fact that Canadians simply did not have the funds necessary for expansion or, if they did, were reluctant to use them for that purpose. The situation is similar in Canada's petroleum industry, and it was probably with an eye on what is happening in Canada's oil and natural gas that the Gordon Commission made its observations.

### What Will Happen to Gordon Report? . . .

While many of the commission's findings were more or less innocuous and obvious, others have drawn sharp criticism, and it is significant that in several respects the report runs counter to the policies initiated and directed by Clarence Decatur Howe, Canada's American-born minister of trade and commerce, a powerful figure in the Mackenzie King and St. Laurent cabinets and generally regarded as the architect of Canada's industrial expansion during and after World War II.

Mr. Howe didn't think such a report was necessary in the first place; now that it has been made he disagrees with it. He felt that if the report agreed with everything the government did or planned to do, it would be accepted as a "rigged" job; if it disagreed with the government it would be embarrassing.

### Crystal Gazing . . .

Apart from policy proposals—and one thing the report does not do is suggest higher tariffs—there is some interesting crystal gazing in the document. For instance, the commission expects that overall production from the forests of Canada will be doubled by 1980.

It is anticipated, however, that the proportion of this production which will be exported will be slightly smaller than at present, and that exports of forest products will constitute only about one-quarter of total Canadian exports in 1980 compared with the present 35%, largely newsprint and lumber. This assumes that there will be no basic change in U.S. tariff policies and that exchange difficulties will not curtail sales to other countries appreciably.

The commission estimates that over the next 25 years newsprint will share with lumber leadership in Canada's forest industry, and the demand for Canadian newsprint is expected to be

just about double what it was last year. Furthermore, it is predicted that U.S. demand for Canadian newsprint will be only half again as large as it is today, but that other foreign demand will increase fourfold, with domestic demand double what it is today.

**Increase Seen in Wood Cut . . .**

The commission estimates that total cut of wood in Canadian forests, extending over an area of 1,500,000 square miles, will probably increase by about 60% over the next 25 years. Two-thirds of the total forest area is expected to yield commercially, and the quantity of wood that could be cut on lands now regarded as accessible is more than double present production, and on all commercially productive lands the cut could be trebled.

The report presents a few tables of interest. For instance, newsprint, other papers and market pulp together compromise 67.9% of total forest industry production in Canada, newsprint accounting for 37%, other papers 15.2%, and market pulp, 15.7%. In forest product exports newsprint and other papers topped the group with a value of $694,000,000, market pulp, $297,000,000; pulpwood, $49,000,000.

**Slow Up—But Don't Stop Investment, Says CPPA Head . . .**

Canada needs and values foreign investment, and the argument that Canadian economic independence is threatened by it is fallacious, Robert M. Fowler, president of the Canadian Pulp and Paper Association, assured more than 1,500 delegates to the annual meeting.

But Mr. Fowler pointed out that Canada should not always welcome, and by her anti-inflation policies even stimulate, the inflow of foreign capital in unlimited amounts.

The association leader was not convinced that Canada's government policies to curb inflation were wisely directed.

"Are there not ways, not to stop, but to slow up the flow of investment and avoid the distortions which result from the premium on our dollar and which for the pulp and paper industry are becoming increasingly serious?" asked Mr. Fowler.

"High interest rates in Canada have attracted foreign capital in unprecedented quantity, and as a result this heavy demand for a relatively small volume of Canadian dollars has raised our currency to a premium over the American dollar which seems quite out of line with our commodity trading position. . . . For the export industries (such as pulp and paper) the impact of this artificial, and possibly temporary, premium on the Canadian dollar can be sharp and serious."

The present policy, said Mr. Fowler, had greatly increased the cost of capital projects in an industry heavily dependent on world markets and which must remain competitive in those markets.

**Optimistic Spokesman . . .**

Mr. Fowler's address, always accepted as a top-level appraisal of overall conditions in the industry, was pitched in an optimistic key. How could it be otherwise in the face of a year of such expansion and mounting

**B. F. Avery**

**John T. Wing**

## U. S.-born Avery heads CPPA, Wing leads Technical Men

Another U. S. Born Chairman, Benjamin F. Avery, an Aurora, N.Y., boy who made good in Canada because of his all-around knowledge of the industry and his knack for getting along with people, is new chairman of the executive committee of CPPA.

This is the second time in three years the association honored a native of U.S.A., a graduate of an Ivy League school and a U.S. army veteran of World War I. Of course, previously, other U.S. born Canadian leaders have held this top elective office of CPPA.

Mr. Avery succeeded A. C. (Coosie) Price, Quebec City born, of Price Bros. & Co. Both Mr. Price and his predessor as chairman, Arthur A. Schmon, Ontario Paper Co., now serve as vice-chairmen.

Interesting is the fact that Mr. Avery, president of KVP Co. of Canada, like Capt. Schmon, was a U.S. army veteran of WWI. Mr. Avery is a graduate of Yale forestry school, and Capt. Schmon is an alumnus of Princeton.

In 1925 Ben Avery became a Canadian citizen to continue work he had started on a part-time basis, while going to college, with the old Spanish River Pulp & Paper Mills at Sault Ste. Marie, Ont. By 1919 he was chief forester of that company and subsequently became woodlands manager for Abitibi Power & Paper Co. In 1937 he joined Great Lakes Paper Co. in that capacity, and nine years later he became vice president and general manager of the KVP Co., of Canada, Espanola, Ont. In 1951 he became its president.

Elected CPPA honorary vice chairman is B. M. Hoffmeister, chairman of the board, MacMillan & Bloedel, Vancouver.

New chairman of the Technical Section, J. W. Wing, vice pres. and gen. mgr. of Gaspesia Sulphite Co., Chandler, Que., is one of the young executives who have advanced rapidly in the industry in recent years. He succeeds Dr. R. de Montigny, technical director of E. B. Eddy Co., Hull.

John Wing's career has been closely associated with Anglo-Canadian Pulp & Paper Mills and Anglo-Newfoundland Development Co., with which the Gaspesia operation is affiliated.

Ontario-born, he graduated from Queen's University and joined Anglo-Canadian's control department in 1936, being transferred to Gaspesia's engineering department four years later. After a couple of years with International Nickel Co. and Anglo-Canadian's wartime shipbuilding division, he returned to the Anglo mill at Quebec City as plant engineer and in 1947 he was made manager of Gaspesia Sulphite Co.

New vice chairman of the section is Dr. R. D. Duncan, gen. supt., Canadian International Paper Co. at La Tuque, scene of major expansion since CIP acquired the operation from Brown Corp.

Also elected to the council were J. G. Langley, Donnacona Paper Co., Quebec; Leslie Cleminson, Abitibi Power & Paper Co., Toronto, and J. McK. Limerick, Bathurst Power & Paper Co., Montreal. Members are elected for three-year terms and those automatically returning are Dr. de Montigny, W. T. Cennett, Canadian International, and H. E. Mason, Howard Smith Paper Mills.

production, with world demand continuing so strong. For newsprint, production last year was 4½% higher than in 1955 and Mr. Fowler was pleased and careful to note that there had been a corresponding expansion in the newspaper business—a reflection of the booming economies of the U.S. and Canada. Canada was still in a period of boom, and Canadians had at last become convinced of it, without fear of recessions—a significant change in outlook.

With a physical output of 11,000,000 tons of all products, the mills in Canada last year produced nearly 6% more than in 1955, which was itself a record year. Total value of this production was nearly $100,000,000 higher than in 1955, and now totals approximately $1,400,000,000. Of this total, exports in 1956 for the first time broke through the billion dollar level and provided 22% of all Canadian exports, the largest single element in the foreign trade of the country.

### Hardboard Trends— Moves into U.S. . . .

Many of the delegates have been talking about the trend towards sideline production of hardboard by Canadian and other mills. So far the only important producers of hardboard in Canada are Canadian Forest Products at its Pacific Veneer division near New Westminster, B.C., Canadian Inernational's operation at Gatineau, Que., and Abitibi Power & Paper Co.'s at Sturgeon Falls, Ont. Now Abitibi is expanding across the border and building a hardboard plant at Alpena, Mich., that will produce 200,000,000 sq. ft. of hardboard annually. The plant will be completed next fall.

Several years ago PULP & PAPER visited Sturgeon Falls, when Abitibi was just moving into the hardboard field, using a mill that previously had produced newsprint. Bill Farnsworth, who still heads the mill there, was doing his best to readjust the whole operation and steer it into then uncharted waters. The Sturgeon Falls "experiment" paid off, and the Alpena plant, which will function somewhat similarly to Sturgeon Falls so far as processing is concerned, will actually be three times as big, with output higher accordingly. Alpena, incidentally, will use scrub oak and other "weed" species for raw material.

(L to r) HON. LIONEL CHEVRIER, member of Canadian cabinet who told delegates that St. Lawrence Seaway would stimulate Canadian pulp sales to the U.S.; H. E. MASON, manager, Cornwall Div., Howard Smith Paper Mills; K. O. ELDERKIN, Bowaters Paper Corp.; R. D. DUNCAN, Canadian International Paper Co.

The Alpena project has been "masterminded" by Paul E. Roberts and Leslie Cleminson, both of whom served a few years in Vancouver with Alaska Pine during Abitibi's participation in that west coast operation now owned by Rayonier Inc. Mr. Cleminson during January-February was in Europe attending a world hardwood congress in Switzerland and touring Scandinavian pulp mills.

Another hardboard specialist, Peter Vajda, of Vancouver, is in Cuba advising on establishment of a hardboard mill that will use bagasse. Mr. Vajda is associated with S. C. Rooney, of Columbia Engineering, which is currently engaged in a consulting capacity on four different hardboard projects, most of them in the U.S., including one in Wisconsin and another in Oregon.

### Split Down Middle on Newsprint . . .

By the time the Montreal meeting opened, the newsprint companies in Canada were split right down the middle on newsprint price hikes. The companies that had already announced price increases were Consolidated Paper Corp., Abitibi Power & Paper, Bowater's Newfoundland and Powell River Co., which together account for about 40% of Canada's total production. It was generally expected, however, that the balance of the industry would soon fall into line since all the mills have been hit by the squeeze in costs of everything—labor, wood, transportation, plus the disadvantage of the depreciated U.S. dollar in terms of Canadian money.

Canadian newsprint production last year surpassed all past records—6,469,000 tons, up 4½%, from 6,191,000 tons in 1955. Rated capacity for 1957 is 6,756,000 tons. U.S. consumption last year was 6,889,020 tons, up 3.9% from the previous year.

### Hardwood Process is Discussed . . .

Although it wasn't discussed in open session, a development receiving considerable attention in Canada, and the U.S. for that matter, is a bi-sulfite semi-chemical process which has been making important advances in areas where hardwoods are in abundance. One of the Canadians who has made an intensive study of bi-sulfite pulp is Roy W. Emery, Toronto consulting engineer with long experience in Canadian mills. This process incidentally has been recommended for Allied Paper Co. at Kalamazoo, Mich., and two Norwegian mills. The bi-sulfite process enables the cooking (with low pH) of species such as jackpine, birch, poplar and maple economically.

Abitibi Power & Paper people aren't

(L to r) F. L. MITCHELL, general manager, CPPA; A. C. PRICE, pres., Price Bros. & Co., retiring chairman of CPPA executive committee; R. de MONTIGNY, E. B. Eddy Co., retiring chairman of technical section; J. McK. LIMERICK, Bathurst Power & Paper Co.; DOUGLAS JONES, executive secretary, technical section CPPA.

(L to r) E. H. SNIDER, Canadian International Paper Co.; C. J. LYONS, Clark & Vicario Corp.; W. T. BENNETT, Canadian International Paper Co.; V. L. CLARK, General Electric Co.

talking about it for publication, but this big company has been experimenting with the bi-sulfite semi-chemical process and is reported to have gotten 80% strength, which is close to the high standard achieved at Holmensbruk in Sweden.

### Talk of More Mills . . .

More than 90% of all sulfate pulp now being produced in British Columbia is from sawmill residue, salvage wood and logs too small to be satisfactorily converted into lumber or plywood, according to R. H. R. Young, exec. vice pres., Crown Zellerbach Canada, Vancouver, who presented a report for the western division to the Canadian Pulp and Paper Association's annual meeting in Montreal.

"Demand for chips resulted in a profit for many sawmills which otherwise would have been forced to close down," said Mr. Young.

### "Healthy Social Climate" Needed . . .

In operating a mill these days, many managers are apt to overlook the human factor in engineering, according to John Windebank, Canadian International Paper Co., who led off a discussion on mechanical engineering at the CPPA convention.

"The approach to the human factor in production has been less imaginative and creative than the approach to engineering practices and the development of technical know-how," declared the CIP authority. "Managers are held responsible for effective production in the mill, yet there continues to be a real need for a professional understanding of what constitutes a healthy social climate in the plant, and it is this climate alone that can encourage a high level of cooperative effort."

### How Machine Operators Are Trained . . .

William A. Buhler, assistant personnel manager, Powell River Co., told experiences of the west coast producer in training paper machine operators.

"In recent years," said Mr. Buhler, "due to steady increases in machine speeds there has been less opportunity for on-the-job type training through the interchange of personnel. A backtender on a 1,000 fpm newsprint machine has a better opportunity to observe operations at the wet end than on one operating at 1,500 fpm or higher. With higher speeds, the noise level has increased and it is more difficult to impart on-the-job instructions verbally. Many of our key personnel are, as a group, approaching retirement age and the need for trained replacements is critical."

Mr. Buhler pointed out that, since papermaking is essentially a production job, down time is costly and, as a result, the tendency of supervisors has been to restrain crews from making adjustments that would mean time loss. The trend has been to depend on one or two super boss machinetenders as an expedient means of overcoming operating problems without taking time to instruct subordinates how to meet these situations.

Training is now regarded as a management tool and it is so used. There have been systematic series of lectures and discussions, with boss machinetenders, department superintendents, training supervisors and subordinate employes taking part. Every opportunity is given for the new men to learn the whole operation.

### Safety Awards . . .

In recognition of outstanding achievements in accident prevention in Canadian mills, awards were presented during the session to the Kenogami mill of Price Bros & Co. and the Newcastle mill of Fraser Cos., the latter recording the fourth consecutive year without a lost-time accident.

Four mills in a different category operated without time loss accidents, too—the Kapuskasing mill of Kimberly Clark of Canada, Nairn Falls Co. mill at Clermont, and the Asbestos mill of Johns-Manville Co.

### Expansion Hits High Level . . .

Subject of much Montreal talk was impending completion of some of Canada's biggest and most exciting mill projects. More new machines will be going into operation than ever before.

Here is a summary of bigger jobs: BRITISH COLUMBIA . . . In MacMillan & Bloedel's $63,000,000 expansion at Port Alberni two new Beloit newsprint machines are being installed, sulfate pulp capacity is being doubled and provision made for coarse paper and board production and bag manufacture.

At Elk Falls Co., Duncan Bay, a $30,000,000 program is now under way, with a sulfate pulp mill just completed for production of noodle pulp to be shipped to Crown Zellerbach's new mill at Antioch, Calif. Additional newsprint capacity is being installed. Main unit: 260-in. Beloit machine.

Powell River Co. is spending $20,000,000 mostly on its new No. 9 Dominion Engineering Co. newsprint machine and new groundwood room.

Alaska Pine & Cellulose is concentrating on a $12,000,000 program at Port Alice.

B.C. Forest Products is spending $36,000,000 on a bleached sulfate

(L to r) W. B. WHITE, Canadian National Railways; GUY MINARD, manager, Spruce Falls Power & Paper Co.; A. FERGUS, of Jervis B. Webb Co. of Canada, who discussed pulpwood handling.

pulp mill at Crofton, Vancouver Island, the drying machine and seven digesters being supplied by Dominion Engineering. Chlorine dioxide will be manufactured in Mathieson-type generators.

Sidney Roofing & Paper Co. is relocating its Victoria mill in Burnaby, near Vancouver; cost $5,500,000.

Expected to get under way soon, but delayed for one reason or another, are Powell River Co.'s project at Kitimat, Celgar Development Co.'s at Castlegar and Western Plywood Co.'s near Quesnel.

ALBERTA . . . North Western Pulp & Power's $33,000,000 bleached sulfate mill is just going into production. Capacity of this mill will be 430 tons. There will be two continuous Kamyr pulping units and a six-stage bleach plant. This is Alberta's first pulp mill. Others are in the planning stage.

SASKATCHEWAN . . . Start is expected soon on the Waskesieu Forest Products integrated mills planned for Prince Albert, to cost about $60,000,000. Robert Campbell of Vancouver and a financing syndicate are behind this venture.

Allied Securities, another financial syndicate, expects to start soon on a $3,000,000 fibreboard and hardboard mill, using wheat straw and prairie wood species.

MANITOBA . . . Manitoba Paper Co. at Pine Falls is putting $6,000,000 into an expansion and newsprint speed-up program.

Abitibi Power & Paper Co., Powell River Co. and other groups are looking into the possibilities of building a mill in the Moak Lake area, using surplus power created by a $175,000,000 International Nickel hydro development.

ONTARIO . . . Abitibi Power & Paper Co. is investing $23,000,000 at Fort William alone, installing a new 276-in. Beloit newsprint machine and making other improvements.

Anglo-Newfoundland Development is working on plans for a $60,000,000 mill in the Sioux Lookout region.

Dryden Paper Co. has spent $12,000,000 on a new chlorine dioxide five-stage bleach plant, groundwood plant and other features.

The E. B. Eddy Co. is spending $6,000,000 on rehabilitating its board mill and putting in new equipment at Ottawa and Hull, Que.

Great Lakes Paper Co. plans to finish its $20,000,000 program in 1957, including a Bagley & Sewall 272-in. machine, eight new Waterous supergrinders, Sprout-Waldron refiners, etc. Later, a fourth machine is expected to be the largest in the world, 340 inches.

Howard Smith Paper Co. is putting in a new chlorine dioxide system at its Cornwall mill, converting its old soda bleach plant to sulfite.

Ontario and Minnesota Pulp & Paper Co. is improving its mills, a new Beloit 276-in. news machine going in at Kenora.

QUEBEC . . . Having completed a comprehensive program at LaTuque, Canadian International Paper Co. has been making extensive changes and speedups at Gatineau, for $4,500,000, and Three Rivers, where $7,000,000 is being spent.

Consolidated Paper Corp. at Grand' Mere mill, invests $9,000,000 in speed-up of Nos. 8 and 9 newsprint machines.

Price Bros. spends $10,000,000 on power development for its Kenogami mill.

Rolland Paper Co. is spending $4,500,000 on a Millspaugh fine paper machine, etc.

St. Lawrence Paper Corp. has earmarked $5,000,000 for Three Rivers, where news machines are being speeded up and similar changes, together with Bauer refiners, at Dolbeau for $4,000,000.

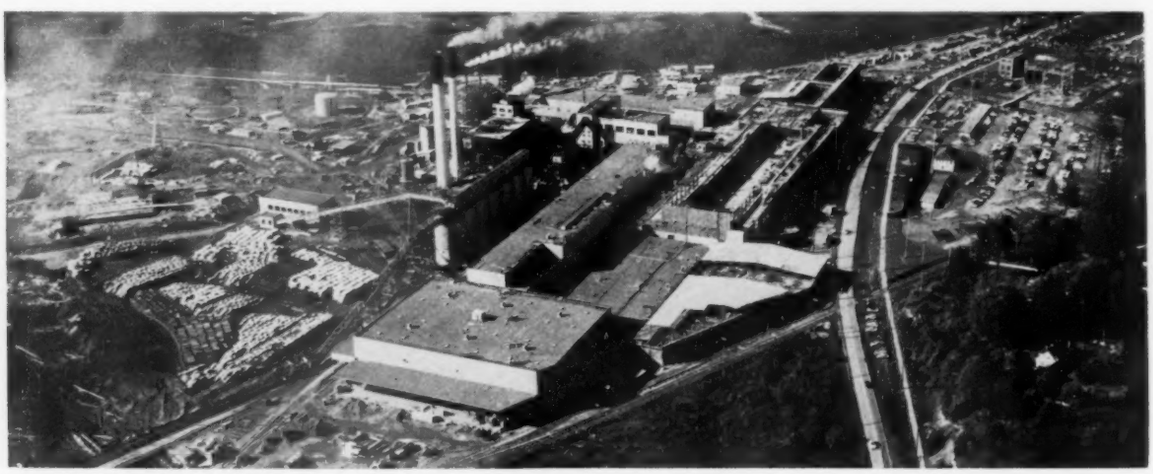
Thurso Pulp & Paper Co. at Thurso, backed by the Singer sewing machine firm is installing equipment to produce 200 tons of bleached sulfate pulp daily.

Quebec North Shore Paper Co.'s Baie Comeau mill is installing a No. 11 grinder line, two Waterous magazine super-grinders with 36 in. platens, driven by a 4,500 hp, 225 rpm motor.

J. B. Jones, vice president of Ontario Paper Co., advises PULP & PAPER that at Thorold, Ont., the speedup of Nos. 1, 2 and 5 machines is virtually completed with addition of a No. 19 Cameron winder and rebuilding of the No. 1 calender stack. Work is proceeding on speedup and widening of No. 4 machine, including new head box, reconditioned Fourdrinier, dryers, and No. 19 Cameron winder.

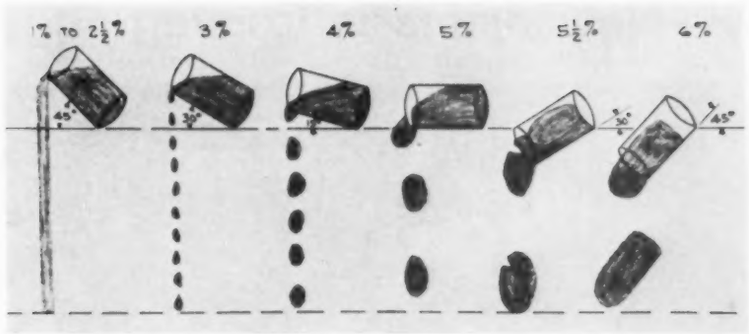
NEW BRUNSWICK . . . Maritime Pulp & Paper Co. has a $50,000,000 project at Lepreau for production of 500 tons of newsprint and some market pulp, with two machines.

NEWFOUNDLAND . . . Bowater's Newfoundland is continuing construction at its big Corner Brook mill, including an auxiliary hydro-electric plant.



**Scene of $67,000,000 Expansion**

Biggest single project in industry in Canada is at MacMillan & Bloedel's Port Alberni mill on west coast of Vancouver Island, B.C. This new photograph shows existing sulfate mill (left) and new newsprint mill, where two machines are being installed, additional bleached sulfate operation, and paperboard and coarse paper plant. Kraft paper and board machine will be in production early in year, first newsprint machine during the summer.




# A Guide for Pumping Thick Liquids

**By E. SCHWANDT***

● To achieve correct pump application for handling thick liquids (paper stock, slurries, etc.) compare flow characteristics of liquids to be pumped with the above illustration.

Actual liquids may not behave exactly as shown—but resemblance will be close.

Handling thick liquids requires careful application of pumps. Key to success is found in precise determination of flow characteristics.

Most is known about paper stock. By applying suitable conversion factors, this valuable information can be used in determining the correct pump application for other thick liquids.

If we fill a jar with a cooked cereal or paper stock, you would have to tilt it at an angle to make the mixture flow. The heavier or thicker the material, the greater the angle the jar must be tilted.

At a consistency of 1% to 2.5% the thick liquid flows in a continuous stream, just like water, when the jar is tilted at an angle of about 45°. Surface of the mixture in the jar remains nearly flat.

At 3% consistency, the jar must be tilted 30°. The flow changes from a solid stream to small, continuous droplets. Surface of the mixture in the jar begins to show convex shape. With a mix consistency of 4%, an angle of tilt of 15° is required. Mixture emerges in larger drops and less continuously. Surface is more convex. At 5% the jar side is horizontal with the mixture dropping in very large gobs. Surface of mixture in the jar is quite rounded with V-shaped cracks appearing as the mixture begins to drop from the jar. At 5.5%, the jar must be tilted so that its side is about 30° below the horizontal. Surface of the mix shows large V-shaped cracks as it leaves the jar. Entire contents may leave in two or three large gobs. Note how mix removes itself from the bottom of the jar.

When mix is a 6% consistency, jar must be tilted 45° below the horizontal and the whole mass leaves in one large single body or slug.

While this illustration may not be exactly correct for the tilt angle in relation to the consistency or behavior of all thick liquids, it can serve as a rough guide in finding the fluidity of many thick mixes. By observing their flow characteristics, advantage can be taken of the mass of data on the flow characteristics of paper stock.

Such a comparison can be helpful in choosing the proper type of pump and impeller for a given job.

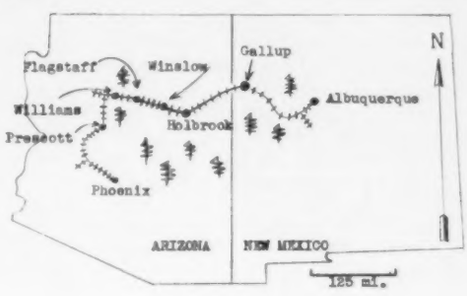
When pumping a thick liquid, made up of a mixture of a liquid and a solid, the most important consideration is to get the liquid into the impeller. When the liquid is delivered freely, the warped vane of the impeller can pick it up without unwatering or clogging. To handle thick liquids a pump design with large impeller openings and special inlet vane design is recommended.

(**NOTE:** Types of pumps. A horizontal type centrifugal pump with open end suction impeller and diagonally split casing for easy cleaning and maintenance, handles paper stock and other thick liquids. A vertical type centrifugal pump for handling thick liquids has an open-type impeller and side inlet.)

*Mr. Schwandt is an engineer in the application division, Goulds Pumps, Inc.

## Bids Due for Southwest Mill

PULP & PAPER's predictions on new Rocky Mountain mills continue to come true, and, as reported previously, another new one is destined the "Colorado Plateau" in northern Arizona and New Mexico. USFS called for bids by Feb. 28 on 6,000,000 cords of pulpable coniferous species (area shown on "Vicinity Map"). By Mar. 1, 1962, purchaser is to have built a 150,000 cords-per-year pulp or fiber mill.




## New Bark Humus Developed at Chicago

A new soil builder from waste bark, described as approaching a permanent type of humus, has been developed by scientists at Armour Research Foundation of Illinois Institute of Technology. It is said to be different from other bark humus because it is suitable for pressure crops (grown several times a year) and will last for several years. Rate of decay can be controlled.

In tests it was found more effective than either peat moss or a commercial soil conditioner. It would be less expensive, too.

Dr. C. Roland McCully, formerly with Weyerhaeuser's pulp division and now scientific adviser in the Foundation's chemistry and chemical engineering research dept., said the bark soil builder, in conjunction with fertilizer, turns clay and sand into rich loomy soil in which plants grow at a surprising rate.

## Brown and McDonald Join Grace in Big Expansion

Wentworth Brown, formerly of Brown Corp. and Brown Co., who went to Vancouver, B.C., three years ago to head up the operations of Canadian Chemical & Cellulose (Celanese Corp. of America) in Western Canada, has resigned as president of Columbia Cellulose Co. and Celgar, Ltd., to become head of the paper division of W. R. Grace & Co.'s Latin American Paper and Chemical Group with headquarters in New York.

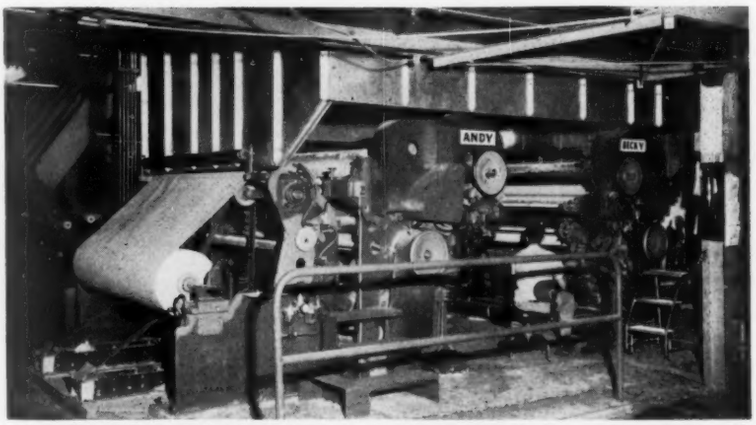
R. A. McDonald, formerly executive vice pres., Crown Zellerbach Corp. and executive committee chairman of Texas Pulp & Paper Co. has been elected a director of Grace & Co. He was recently retained by W. R. Grace & Co. as consultant on paper and he is now studying its bagasse paper operations in Peru and its paper mill properties in five Latin American areas. Grace & Co. has a $46,000,000 paper expansion program in Latin America.

# "Andy and Becky"—Newcomers in Converting

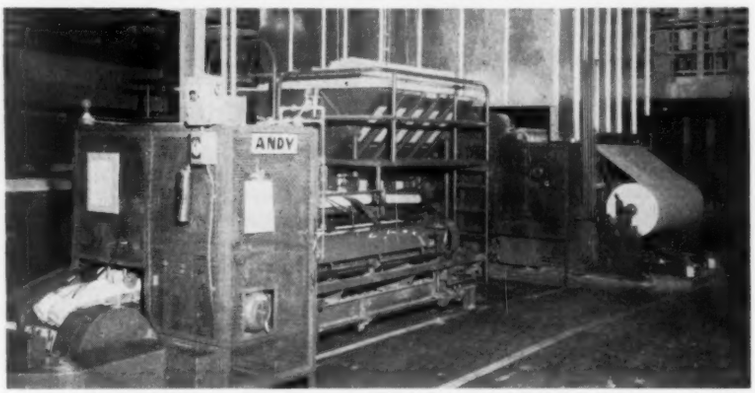
• "Andy" and "Becky," two automatic productive newcomers operating in Crown Zellerbach's Camas, Wash. converting department, are establishing records in rewinding toilet tissue. These machines, each turning out around 45 or more cases (96 rolls each) of finished toilet rolls per hour, set adjacent to each other in face-to-face position and are attended by one operator per shift.

Rolls of parent tissue—dry crepe produced on CZ's St. Helens plant's No. 3 machine in 82.5-in. length and up to 52-in. dia.—are converted by the automatic continuous rewinders and associated integral facilities into 650-count Zee brand toilet rolls The production components of these high-output machines consist of a core hopper-loader, built by Western Gear Works, rewinder built by Paper Converting Machine Co. CZ transfer table and mechanism feeding wound cants to a Gilbertsville Co. saw and CZ separator, take-away system.

Of the automatic rewinder set-up, Converting Mgr. B. F. Warren states it is the result of 10-year program to successfully remove bulk of physical labor from this converting phase. He attributes the successful fruition of the completely integrated production components, considered to be the prototype of future toilet roll rewinders, to cooperative effort of Paper Converting, Western Gear, Gilbertsville and "to the excellent work of CZ converting personnel." Not only are "Andy" and "Becky" reputed to be the first such fully integrated rewind machines, but they reportedly represent an original production combination of components made by the various manufacturers.




**MACHINES WITH PERSONALITY** . . . "Andy" and "Becky," rewinders which, with coordinated auxiliaries, automatically convert parent dry crepe tissue to 650-count Zee toilet rolls, each at around 45 cases per hour. Installation includes converters by Paper Converting Machine Co., Western Gear Works core hopper-feeders, Gilbertsville saws, CZ transfers and saw feeders, and "vacuum wall" hood by Drew Engineering Co.




**EMERGES AS CANTS** . . . Parent tissue feeding into Paper Converting rewinder (far right) emerges as 82.5-in. cants (under Western Gear core hopper at center) for delivery to Gilbertsville saw from which Zee toilet rolls emerge two at a time at lower left.

**WHO NAMED THE MACHINES** . . . E. D. Ochs, converting plant superintendent, is credited with providing "personality names" for the machines and incorporating these facilities into the department's production. C. W. Davis, mechanical superintendent—converting, supervised installation; Emmett Mills, converting gadgeteer, devised various mechanisms which facilitated improving production to the point that the multi-component machine team operates as an integrated whole.

In automatically converting parent tissue rolls to 650-count Zee market rolls, 84-in. cores are removed from the hopper and placed onto rotating mandrels by the Western Gear core loader. These unfilled, mandrel-carried cores advance consecutively to an adhesive applicator and then move on to winding position. As the preceding cant is wound to count the tissue is cut off, the lead end from the parent roll transfers instantly to the prepared core and production continues without interruption. Wound bolts, or cants, discharge from the rotating mandrels to the transfer mechanism which serves as smooth-out storage and also keeps the Gilbertsville saw supplied with stock. Two cants feed through a saw unit at a time, hence each saw—toothless, sharp-edge disc—cuts off two 4.5-in. tissue rolls or a roll and one endtrim per stroke. Trims are segregated from the rolls as they leave the saw unit and the rolls are conveyed past an inspector (one inspector for the two machines) enroute to a wrapping machine which packages them in four-roll family pack selling units.

**QUALITY IMPROVED** . . . Because the Paper Converting rewinders do not slit the tissue, but instead wind it into bolts for subsequent conversion into smooth-end rolls via the automatic saws, substantial improvement in perforation quality is facilitated. Less paper bond is required between perforations than with conventional winders, according to Mr. Warren.

A vacuum-wall exhaust hood, designed and built by Drew Engineering Co., above both rewinders, effectively captures and removes paper-dust particles which result in rather generous quantity from the high-speed processing. A narrow vacuum slot along bottom edge of the hood, supplementing the conventional main hood exhaust, increases the unit's dust collecting effectiveness by providing a concentrated low-point suction intake which prevents escapement of fines into surrounding work areas. The hood has a single blower delivering to a previously existing roof-mounted cyclone.

# Braun retires – but W7HRV still calls 'CQ'

If paper business has taken you to the Pacific Northwest, in the past 38 years, or if you are a radio "ham" in almost any corner of the world, chances are you know Carl E. Braun.

Mr. Braun recently retired as vice president and mill manager of Publishers' Paper Co., Oregon City. But he still carries on from W7HRV, reputedly one of the most powerful amateur stations, at his home in West Linn, Ore., talking to members of the South Pole expedition, operators in countries far and wide, and occasionally, another papermaker. "This is the way to retire," he says.

After serving as chief radioman in World War 1 on the USS South Dakota, Mr. Braun joined Crown Willamette Co. (now Crown Zellerbach), Camas, Wash., installing special electrical equipment. After six years there, he became chief engineer for Columbia River Paper Mills, helping build the mill at Vancouver, Wash., and later was gen. supt. of its mills in Los Angeles, Port Mellon, B.C., Salem, Ore., and Vancouver.

In 1929 he became assistant to the late Ossian Anderson, pioneer of market pulp in the Far West and president and promoter of the original Puget Sound Pulp & Timber Co., which built the biggest sulfite mill in the world at Everett, Wash., now a Scott division. In 1932, Mr. Braun became vice president and mill manager of Hawley Pulp and Paper Co., when his plan for its reorganization was accepted and transferred it from a bondholders committee to his capable hands. When the Los Angeles Times and Salt Lake Desert News bought Hawley and changed it to Publishers' Paper Co., he retained these positions, and he planned the program of improvements which went with the sale.

Many industry people have visited the home of Carl and Blanche Braun, where the entire basement is transformed into the good ship "Hippy Dip," with ship's wheel, typical ship cabins, and even a "wavy" floor, and of course, his high-powered radio station. Just outside the house he has another station, the entire wireless shack from the USS Oregon, rescued by Mr. Braun from that famous warship before it was dismantled. The Oregon had raced around the tip of South America to help win the Battle of Santiago Bay in 1898, and it was the Pacific Fleet flagship in World War I.

Mr. Braun also has a 145 ft. radio tower which formerly served Los Angeles broadcast station KMPC.

Papermaking days are over, but Carl Braun will still be signalling "CQ CQ CQ W7HRV calling CQ and standing by." The magic CQ alert call of the radio "ham" will keep him busy, perhaps performing services as he did when he assisted hundreds in World War II and the Korean War soldiers to contact their homes. A multitude of friends in paper and on the air wish the Brauns "best 73s."

Happy "73's" to CARL E. BRAUN —"This is the way to retire," he says.

BENCHEVATOR enables speed-up of paper inspection at Parsons Paper Co. Each inspector sorts stacks weighing 25 times former lots. One man with lift truck replaces three who supplied inspectors. Picture at right shows how screw-actuated column with table top automatically raises paper to work level.

# Holyoke Mill Speeds Paper Inspection

BENCHEVATORS, a new materials handling device, are being used in the inspection department of Parsons Paper Co., Holyoke, Mass.

As a result, 12 women inspectors are able to sort 1200 to 2500 lb. skid stacks of paper at one time instead of the former 50 to 100 lb. lots, saving 20% in inspection time.

Three men were formerly required to keep the inspectors supplied with work. Now one man on a lift truck handles the job. Spoilage has been reduced by eliminating extra handling.

Rodney Hunt Machine Co. supplied the Benchevators, designed for bench level presentation of sheet stock. The new work-positioner can easily handle up to 5000 lbs.

The design consists of a motor-driven, self-locking screw-actuated column, with a table top. The top can be made any desired size.

At Parsons, units are installed in a row in pairs, one to handle incoming material and the other to receive finished work or accepted pieces. Top of the machine is raised or lowered to most convenient height as the work proceeds. Standard lifting or lowering speed is 30 in. per min., with a lift distance of 36 in.

Push buttons on the wall in front of the operator, actuate a positive gear drive. Automatic limit switches prevent over-running.

Parsons makes 20 tons a day of fine papers from cotton and linen fibers, bond paper, bristols, ledger, etc. E. P. Baggs Jr. is president and Henry V. Burgee is v.p. and general manager.

## Manhattan Rubber To Expand Neenah Plant

Raybestos-Manhattan, Inc. is expanding plant and facilities at its Neenah, Wis., Manhattan Rubber Mfg. Co. subsidiary at a cost of $250,000. It will provide increased straight-line production capacity to better service the roll covering requirements of Fox River and Mid West mills.

# Gold Medal Winner was Mentor to Many

• Quiet and amiable John D. Rue, who has spent 38 of his 64 years in the pulp, paper and allied industries, found a bright spotlight of Paper Week being focussed upon him. In the Commodore Hotel grand ballroom in New York on February 21 he was awarded TAPPI's Gold Medal of 1957 for outstanding technical services to the industry.

On the eve of the ceremony, this picture was obtained by PULP & PAPER of Mr. Rue, with his day-by-day working associates at the Tacoma, Wash., plant of Hooker Electrochemical Co. In their opinion, John Rue not only won the Gold Medal for technical achievements, but for human ones, too. In his 26 years with Hooker, he has been mentor and fatherly counsellor to several "generations" of Hooker executives and technical men.

On technical grounds, he won the award for many contributions, particularly in multi-stage bleaching, studies in clay use, in paper, semi-chemical pulping of chestnut in the lower Appalachian region, pulping of jackpine, and decayed wood, and for his participation in various Hooker company developments and improvements.

Mr. Rue went west to be works manager of the Hooker Tacoma plant in 1946. Since 1951 he has been serving in a consulting capacity. In early years in the West he was closely associated with Thomas Moffitt, now vice president in Niagara Falls, N.Y., head offices, and Col. Albert Hooker, now retired. Then came "under his wing," more or less successively, the men in the picture below—Russell O. Vognild, now asst. western sales mgr., Tacoma; Robert E. Noble, works mgr., Hooker's Vancouver, B.C., plant; and presently, El Paul Duncan, who succeeded Mr. Noble as technical service supervisor in Tacoma, who now works closely with Mr. Rue.

Before joining Hooker, Mr. Rue was engineer with the Newsprint Service Bureau for two years, research director for three years at Champion's operations in Canton, N.C., head of the Pulp and Paper Section, U.S. Forest Products Laboratory, Madison, Wis., for six years, and chemist and research director of Management Engineering Development Co., Dayton, O., for two.

He was born in Dutch Neck, N.J., Oct. 18, 1882, graduated and received a master's degree from Princeton, continued studies at Heidelberg, Germany, and Zurich, Switzerland, and the University of Michigan. He was asst. professor of chemistry at Oklahoma University and later, professor of chem. engineering at Michigan. In World War I he was a captain in the chemical warfare service.

**Medalist and "His Boys"**

(L to r) E. PAUL DUNCAN, RUSS VOGNILD, Gold Medalist JOHN RUE and ROBERT E. NOBLE.

# Some Highlights of TAPPI PAPER WEEK

TAPPI-goers to Paper Week saw some reorganizational changes. Philip E. Nethercut, recently chemical research administration manager, Scott Paper Co., Chester, Pa., has been named technical director of TAPPI. Vance P. Edwardes, former president of TAPPI, and 1955 TAPPI medalist, is now chairman of the newly established administration committee. This committee will be responsible to the executive committee for carrying out policies.

Indianapolis-born Mr. Nethercut graduated in 1942 as a chemist from Beloit College; received his Ph.d. from the Institute of Paper Chemistry. He was a chemist from 1949 to 1951 with Watervliet Paper Co., now a subsidiary of Hammermill, then joined Scott.

Mr. Edwardes started in the industry on the Pacific Coast, retired a few years ago from International Paper Co., is now a consultant and will devote part of his activities to TAPPI and continue his consulting work.

## Some Important Papers Given at PAPER WEEK

And for busy engineers who didn't have time to take in as many sessions during TAPPI Week as they would like here's PULP & PAPER's digest of some important papers:

**Theory of Screening** by A. Tirado, Fabricas de Papel Loreto y Pena Pobre, Tlalpam, Mexico. Conclusions: Amount of pulp and impurities rejected from screen is made up of four independent fractions because of several variations of the process. 1—Simple overflow. 2—Overflow due to shape of perforations. 3—Overflow due to interlacement of fibers. 4—Overflow due to differences in diameter of fibers and impurities.

**Use of Titanium Dioxide to Prevent Showthrough in Paper** by Ray I. Bashford, Jr., DuPont Co. Important is that test method for opacity is based on opacity of dry paper—fails to consider factors affecting opacity when paper is printed. Materials in paper can affect printing opacity or showthrough markedly. Better appreciation of the problem involved in printing could be had if papers would be tested for their waxed or oiled opacity.

**Aquatel** by J. A. Hart and W. Gallay of the E. B. Eddy Co., Hull, Que. This mill-developed moisture meter is for instantaneous measure of moisture in paper either continuously on moving web or on individual samples. After 5 years experience, Eddy Co. says range of moisture content from 3% to 10% may be measured with an operating accuracy of about ±0.2% in on machine measurements and higher accuracy in sample measurements.

Isotope Products (Instrument Div.) Inc. of Buffalo is handling this unit.

**Evaluation of Combinations of Starches and Natural Gums as Papermaking Aids** by Merchant L. Cushing, A. E. Staley Mfg. Co: Use of blends of natural gums with various starches as wet end additives has arisen from need to extend rather limited supplies of gums during early decade. Also, this use has stemmed from lab and field results which frequently indicated that combinations were as effective as gums alone plus occasional results which indicated combinations were considerably more effective than gum alone. Results appear to justify added cost of starch component since under environmental conditions, starch performance is considerably upgraded.

**Interpretations of Dry Strength Improvements Obtained with Beater-added Resins** by F. H. Davison, R. T. Mashburn and S. T. Putnam, Hercules Powder Co. and Harris O. Ware, Beveridge Paper

Continued on page 164

# The Beloit Album

**WATER TOWER AT BELOIT EASTERN CORP.**, Downingtown, Pennsylvania, is seen between two steel workers as they cross one of the bridge cranes on new erecting floor. This structure, part of Beloit Eastern's extensive expansion program, will be completed by the time this issue of the Album appears. For further details and photographs, please turn page.

**ENSO-GUTZEIT MEDAL** is presented by Pentti Halle (l), director of the Finnish papermaking firm, to Cash Whipple, Beloit's "senior salesman" retiring after 53 years of service. Miss Stella Stitt, Beloit, pins the medal on.

**R-W PAPER** Company's manager R. E. Harper, *at left*, discusses with Beloit vice-president J. E. Goodwillie the operating performance records of R-W Paper Company's new 186" Beloit machine.

**AMERICAN TECHNOLOGY** as applied to the making of paper machines was of interest to recent visitors Yoshikuni Seki (l) and S. Ono (c), Mitsubishi Heavy-Industries, Reorganized, Ltd., Tokyo, Japan. At right is Beloit representative J. S. Zabel.

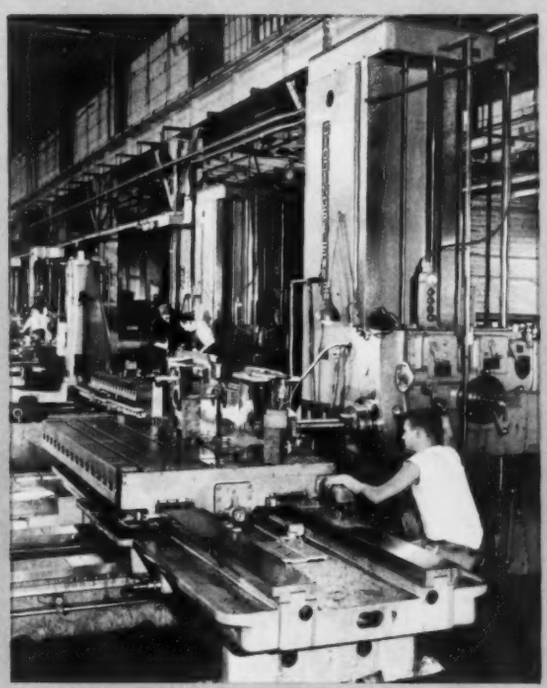
**ST. REGIS PAPER** Company's L. Waterman (r), ass't to manager of paper production, with Beloit ass't sales manager C. P. Spalding (c) and R. Ruegger, look over a part for No. 1 machine, Jacksonville Mill, duplicate of part being installed on No. 2 machine.

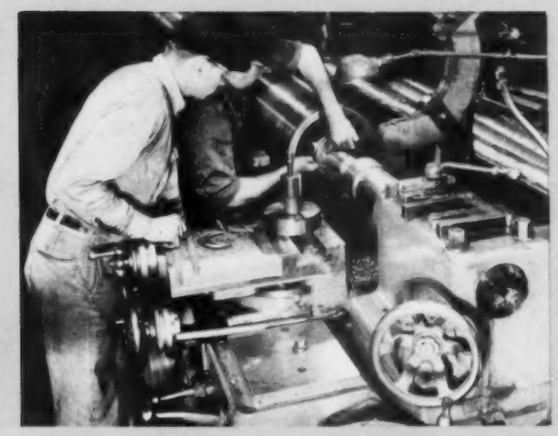
# This is Beloit Eastern

**AT DOWNINGTOWN, PENNSYLVANIA,** Beloit Eastern Corporation is expanding at a rapid rate. Immediately upon acquisition of Beloit Eastern in the fall of 1955, president W. S. Wood (*at left*), who is also vice-president of manufacturing, Beloit Iron Works, launched an extensive program to double the plant's manufacturing area and triple the productive capacity. Views on these two pages indicate how extensive the expansion is. Above, at left, viewed from main line of the Pennsylvania R. R., you see the new powerhouse, with the main foundry bay at left center. Hidden behind the recently completed machine shop addition, center, is the new foundry core room bay. At right above is the new machine shop and erecting floor (which will be completed by the time this issue appears). Below, left, is a closeup of the erecting floor and machine shop addition (66,000 sq. ft.). Modern tools, such as boring bars pictured below, at right, are typical of the new tools being installed throughout the shops.

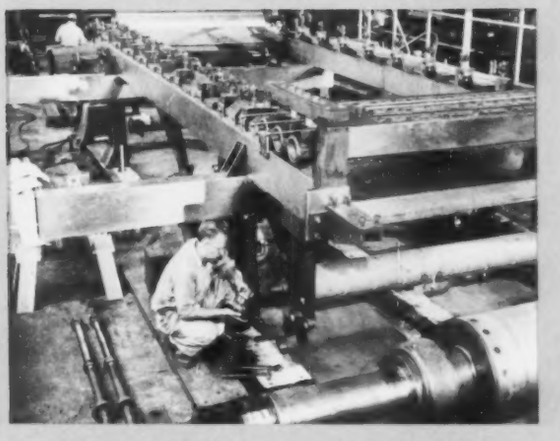
In 1955 there were 285 employees at Beloit Eastern; the plant had a manufacturing area of only 99,000 sq. ft. During 1957 employment is expected to go to more than 800, and the plant will include over 200,000 sq. ft. of manufacturing space. This expansion at Beloit Eastern Corp., coupled with the expansion at Beloit, Wis., will result in combined total employment at the two plants in 1957 of over 3,500, with combined shop areas of over one million sq. ft.

Beloit Iron Works and Beloit Eastern work together as a group, a close-knit team of skilled craftsmen with singleness of purpose—that of building the best possible papermaking machinery. In every way possible, Beloit has endeavored to increase its effectiveness as "your partner in papermaking."

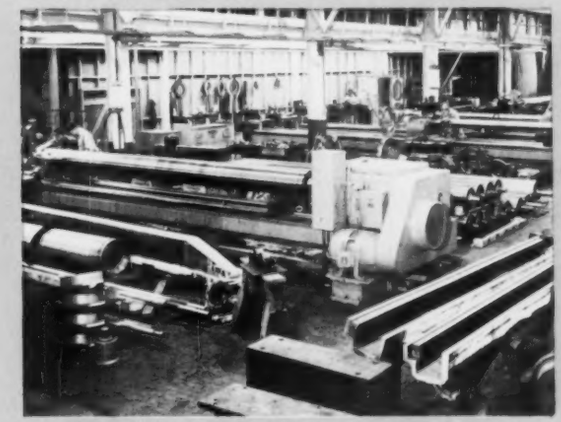




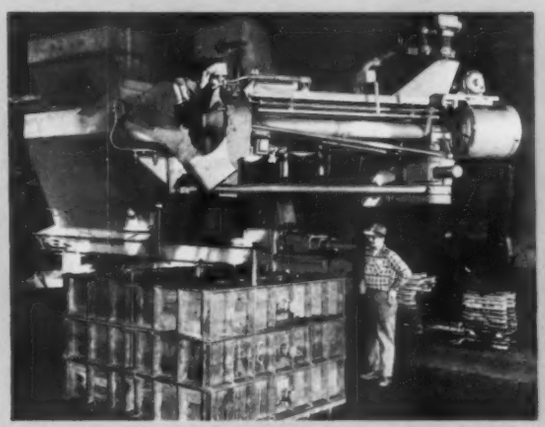
**EXPANSION** means training programs and new personnel, skilled craftsmen coming up. E. Eckenroth (r), Beloit Eastern lathe operator, shows Gordon Stilwell the correct way to polish a felt roll bearing fit.



**EXPANSION** of Beloit Eastern welding department will take over the area now occupied by the erecting floor. Paul Hoopes, erector, is seen working on a Fourdrinier for a West Coast tissue mill.



**EXPANSION** of machine shops will take over this area now occupied by pipe roll department. Pipe rolls eventually will be moved into their own building (see below).



**EXPANSION** at Beloit Eastern means modern foundry equipment such as this speed sand-slinger. Two cupolas supply the machine shop's casting requirements. There are also quality control labs for sands and metals.

**EXPANSION** adds 26,000 sq. ft. of manufacturing space in new pipe roll shop. Direct siding from Pennsylvania Railroad will facilitate materials-handling and prompt shipping of finished rolls.

*your partner in papermaking*

# BELOIT

## PAPER MACHINERY

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WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE!

*Yankee Dryer Journal and R. Gilliam. Photo by J. W. Miller*

## 16,400 POUNDS OF CLASS 50 IRON

Seventy-five hours ago this Yankee Dryer journal existed only as separate items—molding sand, pig iron, steel scrap, foundry returns, alloys, coke, limestone, flux, a print, an order sheet, a job ticket. Then, for 11 hours, Beloit molders carefully prepared the mold, while a quality control group kept check on the sand to make sure it would ram evenly and firmly. Five hours were required to close the mold and ready it for pouring. (During this time the cupolas were being prepared for the day's heat.) When the iron was at exact temperature the metal was poured and the casting formed—an operation which took little more than a minute. The casting cooled slowly for 48 hours, then was shaken out. (It takes approximately 10 hours to shake out a casting of this size.) Next came inspection and a trip to the shot-blast room where residue sand was "blasted" away by metal shot and compressed air—a 60-minute operation. When the above picture was taken the casting had just come from the shot-blast room for the final four-hour chipping and grinding operation. Next step: machine shop.

*your partner in papermaking*

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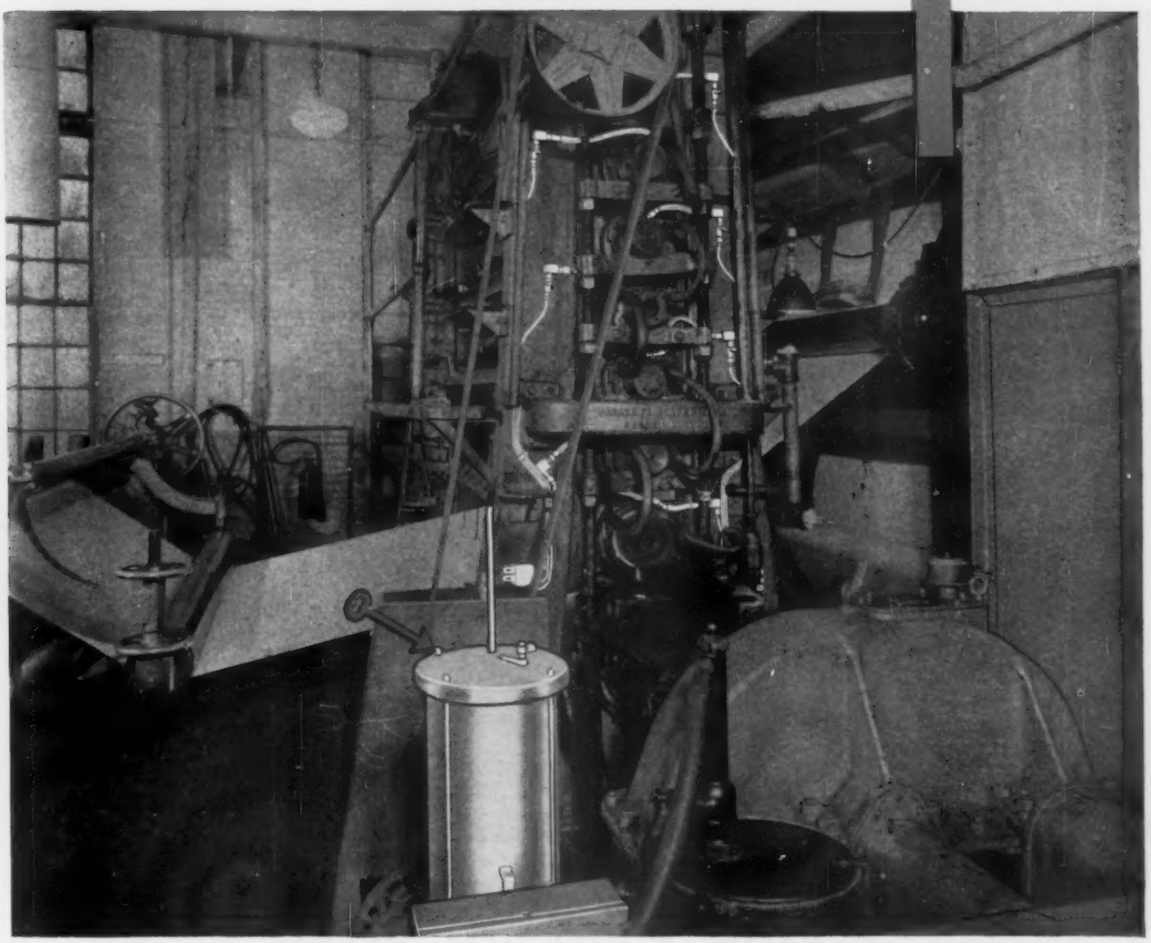
**PAPER MACHINERY**

# Adequate lubrication, vital to life of Calender Stack, supplied by Farval

FARVAL—
*Studies in Centralized Lubrication*
No. 191



KEYS TO ADEQUATE LUBRICATION—
**Wherever you see the sign of Farval—the familiar central pumping station, dual lubricant lines and valve manifolds—you know a machine is being properly lubricated.**

**18 bearings on this Calender Stack are lubricated by Farval. Immediately in the foreground is the automatic central pumping station.**

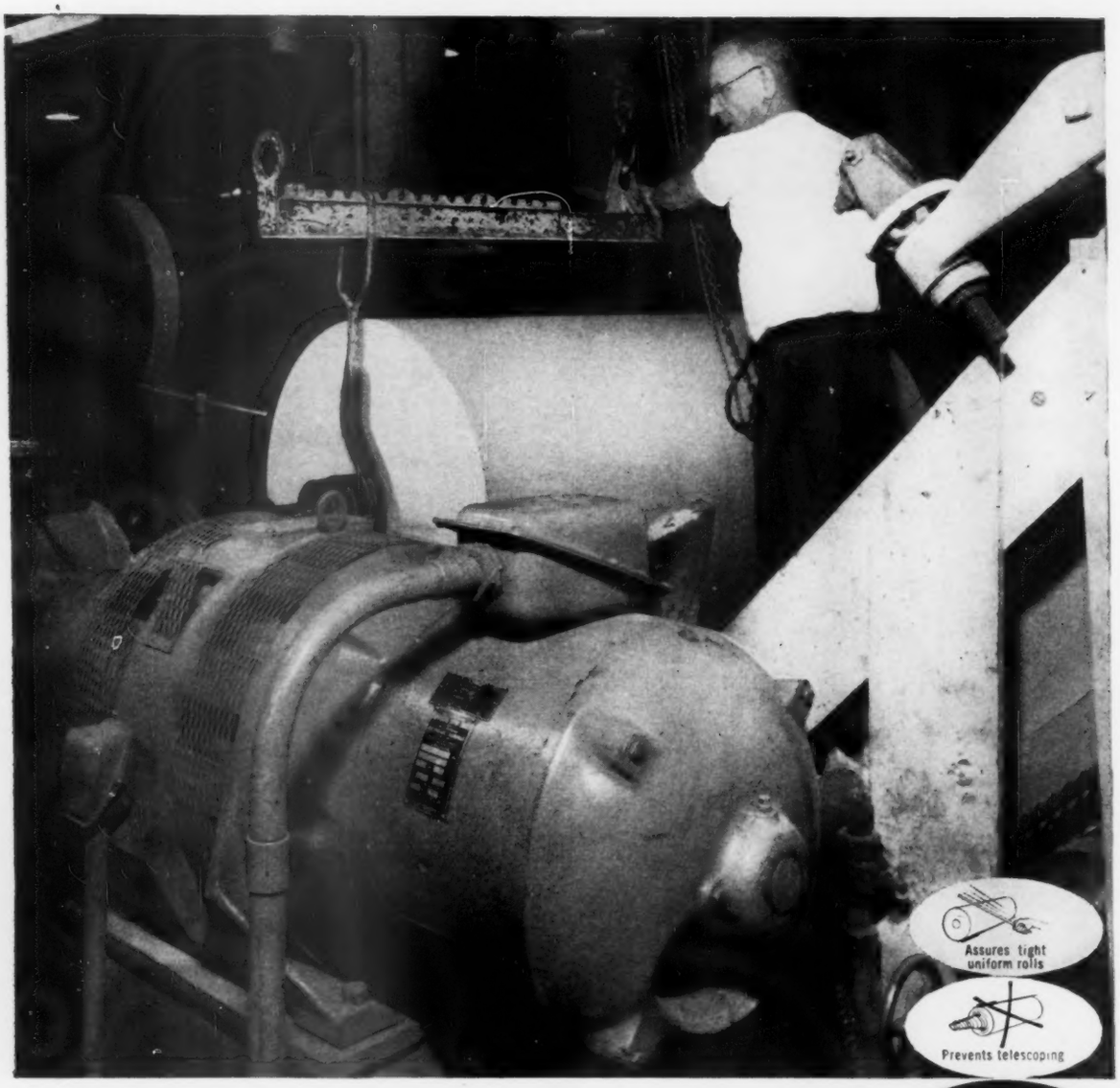
In producing 700 feet per minute of fine paper smoothly and continuously, this Calender Stack must have adequate lubrication of all bearings. Adequate means not only *sufficient* lubricant to keep bearings running cool and without drag, but also *just enough* lubricant to prevent dripping and spoilage of paper.

This particular Calender Stack at Hammermill Paper, Erie, Pa., is satisfactorily lubricated by a Farval Automatic System. Installed in 1947, there has not been a shutdown or delay due to faulty lubrication in 9 years.

Farval, the pioneer system of centralized lubrication since 1926, employs the famous Dualine principle. It insures correct delivery of oil or grease at all times to any number of bearings. For complete information, write for Bulletin 26-R.

The Farval Corporation, 3268 East 80th Street, Cleveland 4, Ohio.

*Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.*




# A dollar-saving wind-up drive

**Louis Allis Ajusto-Spede® provides adjustable speed from A. C. power supply**

Wind-up drives with precise tension control can reduce your "broke" and down-time.

Louis Allis Ajusto-Spede® drives have proven successful in eliminating the problems encountered with wind-up drives in all the paper industries from manufacture through printing and converting, and on all types of materials from tissue to board.

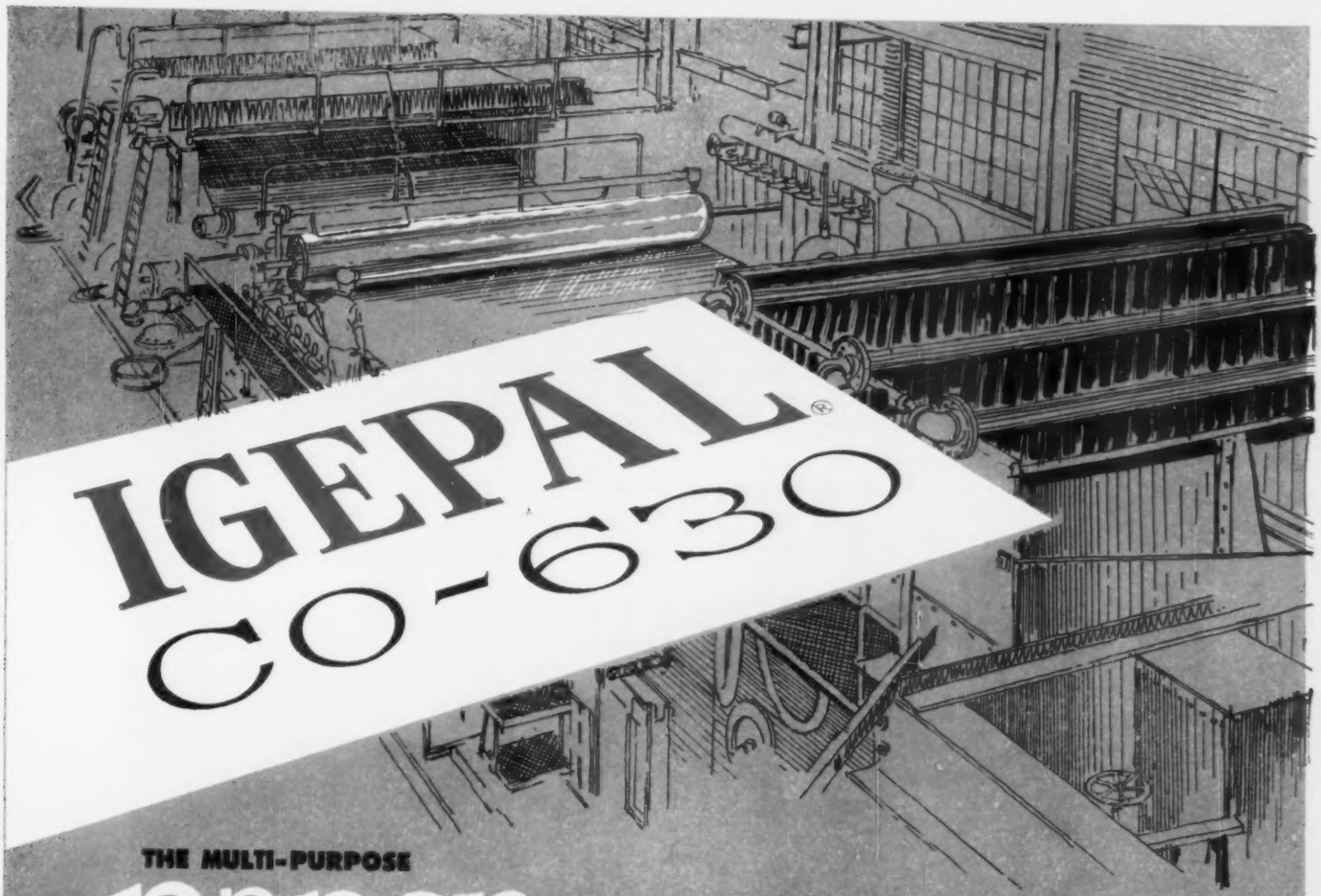
Here's what this versatile drive can offer you:

- 1 to 75 h. p.
- Linear speed range from 100 to 2,000 fpm
- Roll build-up ratios up to 15:1
- Controlled tensions from ½ lb. to 10 lbs. per inch of width
- Inertia compensation for maximum acceleration rates
- Adjustable stalled tension for smooth starts

A phone call to your local Louis Allis District Office will bring a skilled Louis Allis sales engineer. He'll gladly study your problem and advise — with no obligation. Or write for Bulletin 611E, "Ajusto-Spede Drives." The Louis Allis Co., 444 E. Stewart Street, Milwaukee 1, Wisconsin.

**LOUIS ALLIS**

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE-SPEED DRIVES



# IGEPAL® CO-630

## THE MULTI-PURPOSE paper CHEMICAL

**DIGESTER**—Improves screened yield in short-cycle sulfite pulping and acts as a pitch dispersant. In a kraft digester, aids in reducing black-liquor losses.

**CAUSTIC EXTRACTION TOWER**—Helps remove from chemical pulp the troublesome resins and unsaponifiables that are not removed with caustic solution alone.

**BLEACHING CYCLE**—In the first hypochlorite bleach stage to disperse troublesome pitch and to correct pitch spots in bleached sulfite pulp; also, to prevent sticking on press rolls.

**BEATER**—In kraft pulp, to improve rewetting and softening of wet-strength paper towels and sulfite blotting stock.

**HEAD BOX**—A solution of Igepal CO-630 added at the head box improves formation of paper and board by dispersing pitch, fines, and pigments and improves the drainage of heavy sheets and boards. On cylinder machines the addition of this solution keeps felts open and thus assists drainage through the felts.

**FELT CLEANING**—Effective for neutral, acid, and alkaline washing of felts, as well as for solvent-emulsion application.

**SYSTEM CLEANUP**—Effective with alkaline builders in cleaning up stock chests, white water returns, and other equipment to prevent slime and dirt build-up.

**DEINKING**—Surfactant for removal of ink and dyes in the caustic cooking of waste papers and rag stock for fine-paper production.

*These are but a few of the important uses of this IGEPAL surfactant in the paper industry. Write today for complete information on the use of Igepal CO-630 in your particular application.*

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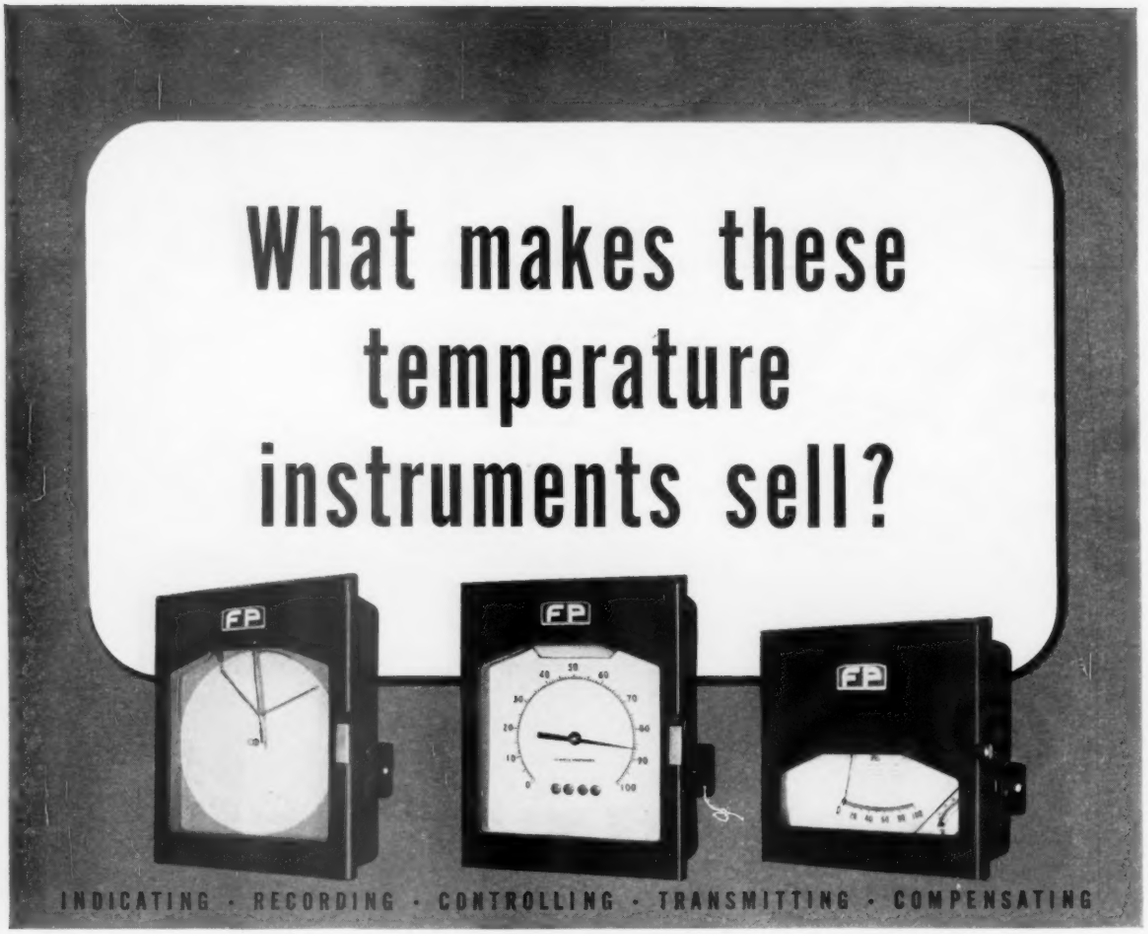
*From Research to Reality*

# What makes these temperature instruments sell?




FISCHER & PORTER temperature instruments sell. We can't tell you *all* the reasons why, but we *know* instrument men order them again and again.

It must be their reliability. It must be their accuracy. It must be their quick response.

All of these things and more are built into F&P temperature instruments.

Check the many advantages you get with F&P instruments:

**Fast response** *because of balanced design. Thin wall bulbs, internal capillary diameters and high filling pressure make it so.*

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**For any application** *between minus 400°F and plus 1000°F.*

**Linear output** *in all liquid and gas filled systems.*

**Positive** *over-range and under-range protection.*

**Up to four pens** *in one instrument.*

**Dual control instruments,** *with all accessories enclosed within the case.*

**Stainless steel parts,** *controller adjustments easily accessible, all controller options available.*

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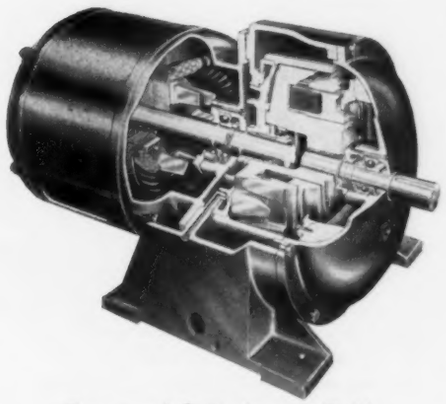
# Adjustable Speed Drives



Dynaspede® Stationary Field Coupling, with Integral Motor

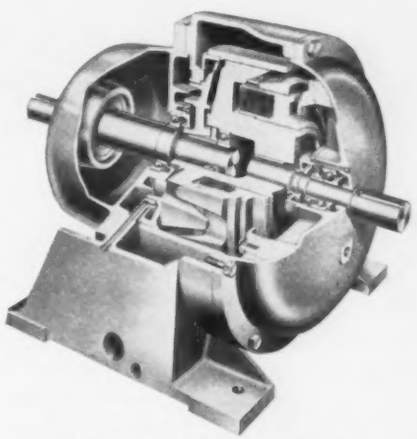
Dynamatic stationary field couplings are the simplest drives so far devised to provide infinitely adjustable speed from an alternating current source. The absence of rotating coils, brushes, slip rings, and commutators in this design holds wear and maintenance to an absolute minimum. Dynamatic electronic or magnetic amplifier controls, in combination with these drives, provide wide latitude in operating functions.

## Check these Outstanding Advantages:

**Accurate speed control • Wide speed range • Low power losses • Simple construction • Rapid response • Remote control • Quiet, efficient operation • Low maintenance costs**

**Ajusto-Spede® Drives:** Air cooled, stationary field eddy-current couplings mounted integrally with D-flange open drip proof squirrel cage motors are available in capacities from 1 to 75 HP. Units of the same design and capacities are also available without motors.

**Dynaspede® Drives:** Liquid cooled, stationary field couplings mounted integrally with D-flange squirrel cage motors are available in capacities from 3 to 75 HP. Motor types available are drip proof, splash proof, totally enclosed fan cooled, and explosion proof. The coupling is totally enclosed. Separately mounted couplings are also available in capacities from 3 to 2500 HP and larger.



Stationary Field Coupling for use with Separately Mounted Motor

*Send for Detailed Information on these New Stationary Field Couplings and Drives*

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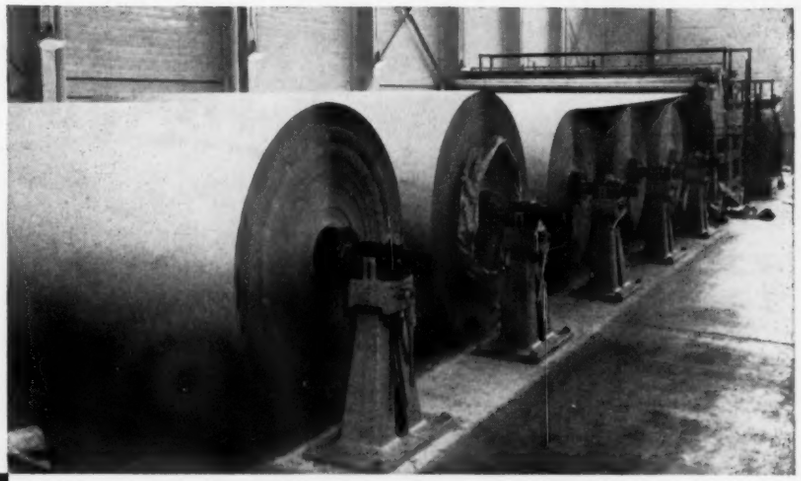
# How to Get More Production From Your Sheeters

## . . . and other web-feed equipment

In more than half a century of experience designing roll stands to keep pace with the ever-increasing speeds of Clark-Aiken Cutter Layboy Units and to enable users to take fullest advantage of their production potentials, Clark-Aiken engineers have developed many ways to facilitate loading, speed roll changes and insure accurate, trouble-free feeding.

Using sturdy, rigid Clark-Aiken roll stands with fast-loading safety half



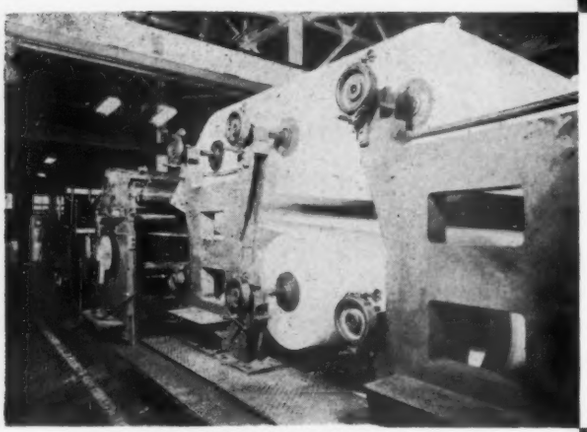


Photo Courtesy Hammermill Paper Company

bearings, quick vertical and alignment adjustment and precision adjustable tension brakes, and employing proven turntable and transfer car principles, they can plan roll stand installations exactly suited to individual plant conditions that will greatly increase loading efficiency and cut many valuable minutes from down time required for roll changes. In doing so, they have often saved mills large investment in new machines which, otherwise, would have been necessary to meet production requirements.

If you are interested in getting maximum production from your sheeters and other web-feed equipment . . . new or old . . . Clark-Aiken engineers can, doubtless, offer some valuable suggestions. Phone or write

*Clark-Aiken*

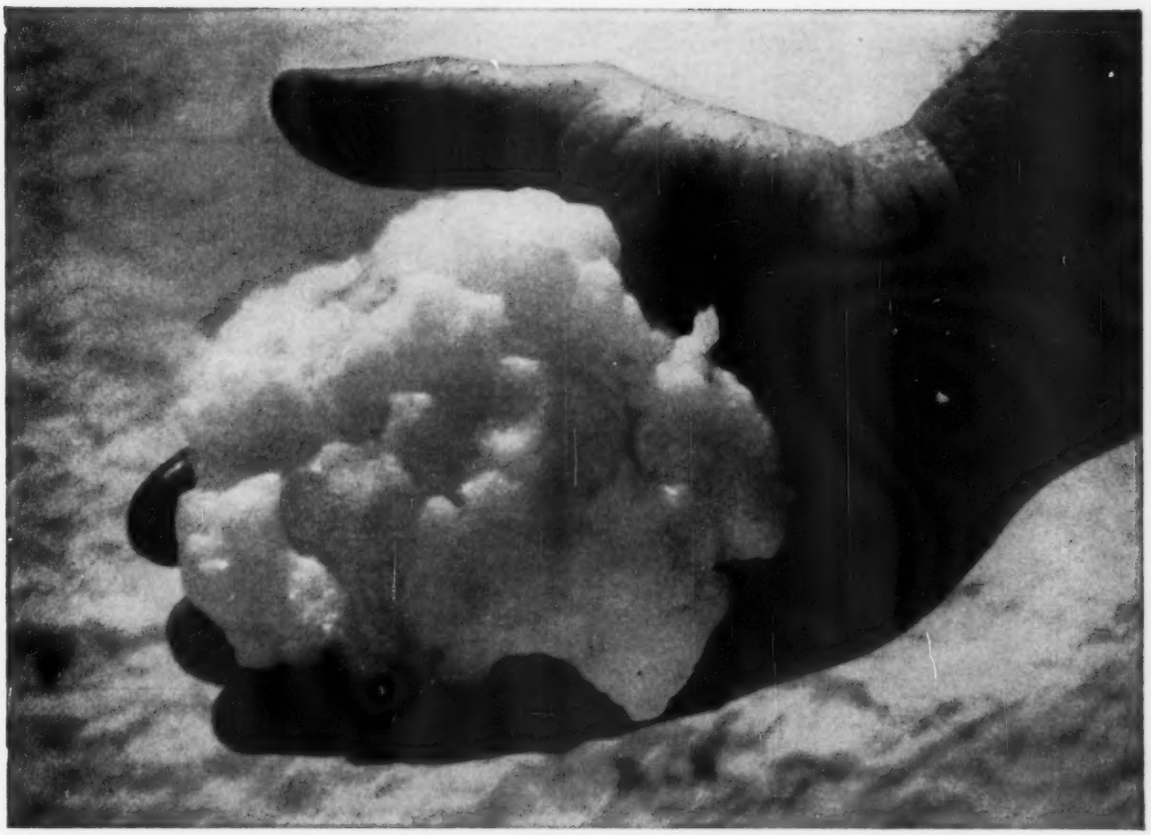
### STUB ARBORS another way to speed roll changes . . . and save labor

Weighing approximately forty pounds apiece, the two stubs of the Clark-Aiken Stub Arbor Assembly are easily handled by one man and readily inserted in close places where a single long shaft, weighing more than a hundred pounds, could not be handled. Fixed bearing and depth limit collars can't jamb, fall off or slip while the roll is in position, insuring and maintaining perfect alignment. Ruggedly made of special steel to support heaviest rolls and give many times the service life of solid shafts. One size fits rolls of any width, eliminating the necessity of carrying large inventories of shafts of different lengths. Write for Stub Arbor bulletin.

THE *Clark-Aiken* COMPANY

957 SPRINGFIELD ROAD

LEE, MASSACHUSETTS



Photograph of Western Hemlock pulp bleached snowwhite at world's largest specialty paper mill—The Camas Division, Crown-Zellerbach Corporation.

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## Sodium Chlorate
## Chlorine
## Caustic Soda
## Anhydrous Ammonia

Two PENNSALT plants located in the Pacific Northwest make an important contribution to the pulp and paper industries and to many other users of basic chemicals. Nearby plants mean *economies* in transportation; *dependable* supply and *prompt* delivery; *reduction* of inventory requirements. PENNSALT quality controlled chemicals serve well the West, Canada and Alaska. *Write or telephone for Technical Service.*

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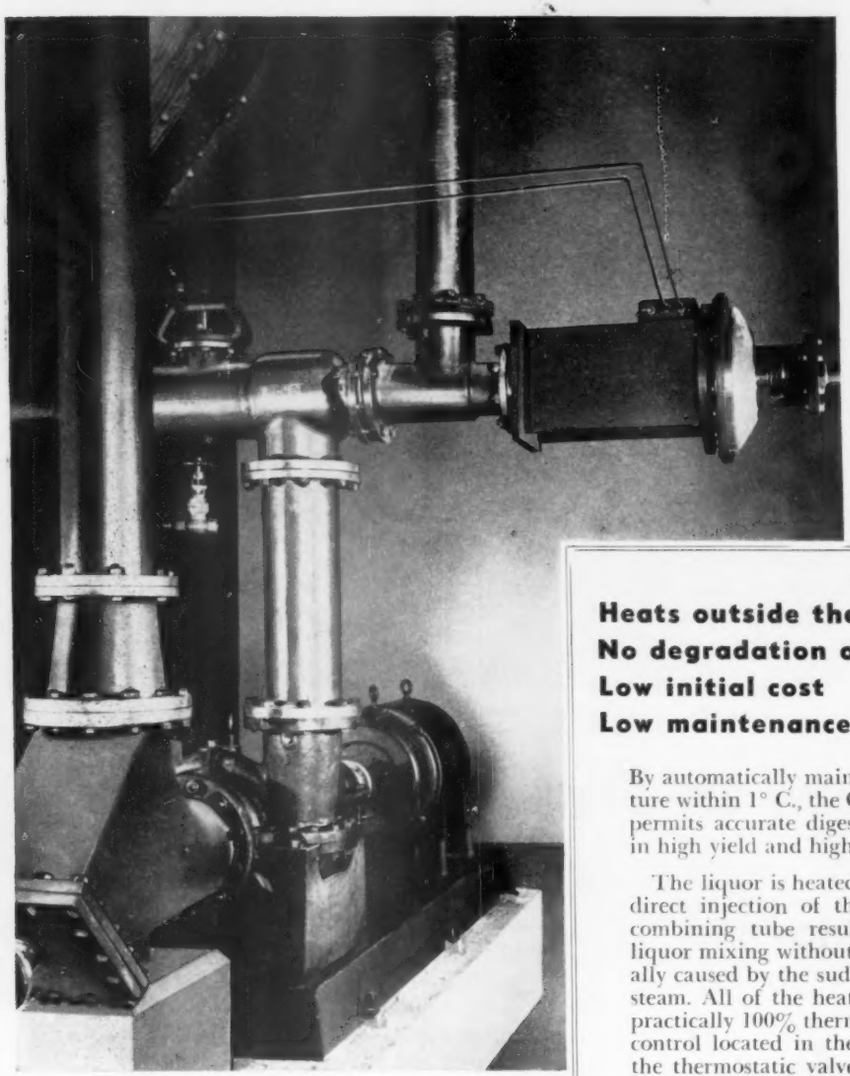
# *Assure Higher Yield of More Uniform Pulp with the* **Chemipulp HYDROHEATER**



Hydroheater installed in horizontal position, with steam inlet at top and liquor inlet at bottom. Air actuated thermostatic valve shown a right. Combining tube adjustment at top left.

**Heats outside the digester**
**No degradation of fibre**
**Low initial cost**
**Low maintenance cost**

By automatically maintaining liquor temperature within 1° C., the Chemipulp Hydroheater permits accurate digester control that results in high yield and high quality.

The liquor is heated outside the digester by direct injection of the steam. An ingenious combining tube results in thorough steam-liquor mixing without the excessive noise usually caused by the sudden condensation of the steam. All of the heat in the steam is used — practically 100% thermal efficiency. A sensitive control located in the digester inlet operates the thermostatic valve in the steam line and holds the temperature within 1°C.

Compact in design, the Hydroheater actually becomes part of the piping system and can therefore be used in a wide range of locations and positions.

**Chemipulp Process, Inc.**
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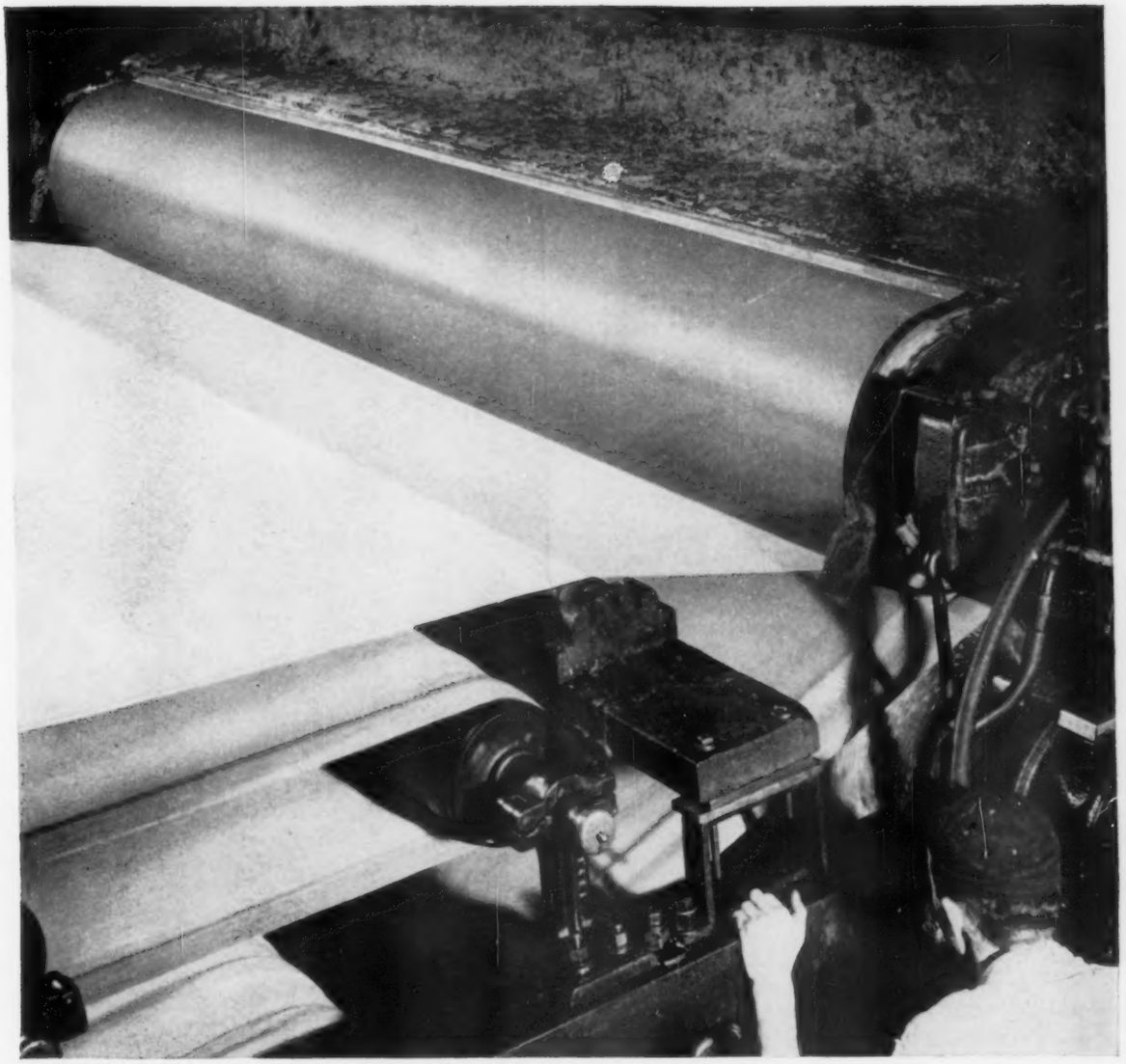
**Associated with Chemipulp Process Ltd., 403 Crescent Bldg., Montreal, P. Q.**

***Pacific Coast Representative, A. H. Lundberg, 308 Orpheum Bldg., Seattle 1, Wash.***



## *hard . . . resilient . . . durable*

## MICROROK® *rolls speed paper production*

Combining the hardness qualities of metal or granite rolls with the resiliency and durability of rubber, Microrok rolls provide the firm, uniform squeeze and quick, clean sheet release which means faster, trouble-free paper production. Microrok rolls have high wear resistance, are not adversely affected by most chemicals used in papermaking, and may be easily reground whenever necessary.

Ask your Stowe-Woodward Sales Engineer about the many advantages of Microrok rolls in your mill.

*Complete roll processing plants at:*
NEWTON UPPER FALLS, MASS.
NEENAH, WISCONSIN
GRIFFIN, GEORGIA

**STOWE-WOODWARD, Inc.**
*Craftsmen in rubber*
RUBBER ROLLS with a REPUTATION

*New York office:* WOOLWORTH BUILDING, NEW YORK 7, N. Y. ● *On the West Coast:* HUNTINGTON RUBBER MILLS, INC., SEATTLE

**YESTERDAY** . . . meeting
an easy production quota

**TODAY** . . . trail-blazing
to new speeds, greater profits

A few years ago, it was no problem to get and to hold your share of the market. Today, in the new competitive picture, leading mills across the country are turning to Puseyjones for the new developments that mean higher speeds and larger profits . . . to put them out ahead of competition, in quality *and* quantity.

Puseyjones developments have given a competitive advantage to mills with Puseyjones Machines. Today that advantage is more important than ever before. And tomorrow it will still mean capacity production, top quality, and higher profits.

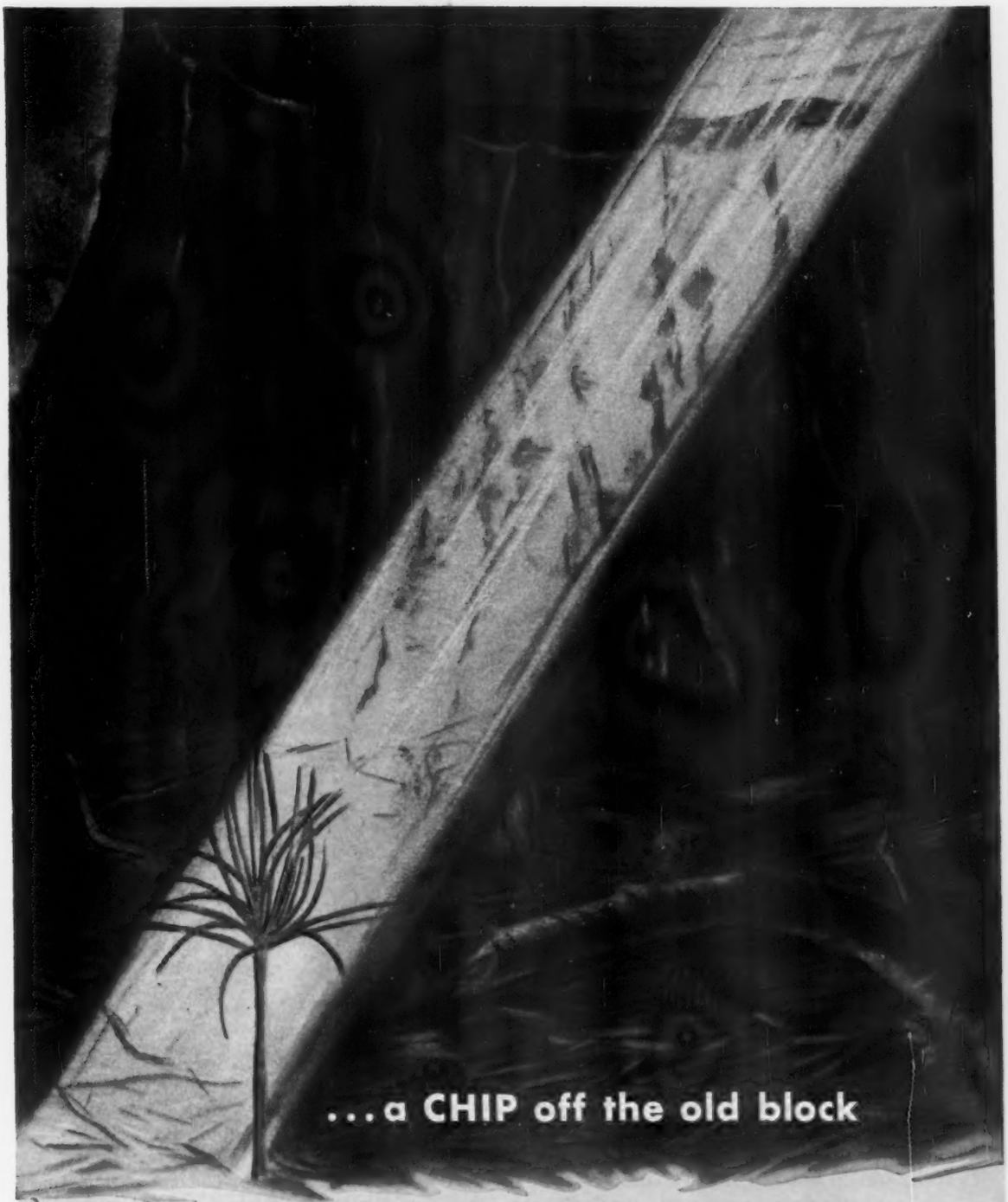
When you need a new machine . . . or to modernize an old one . . . it pays to talk it over first with the Puseyjones Engineers. Write or call them today.

**THE PUSEY AND JONES CORPORATION**
**Established 1848 : : Builders of Paper-Making Machinery**

*Fabricators and Welders of all classes of Steel and Alloy Products*

**Wilmington 99, Delaware, U.S.A.**

THE SIGN OF TRADE MARK SUPERIOR QUALITY



# ...a CHIP off the old block

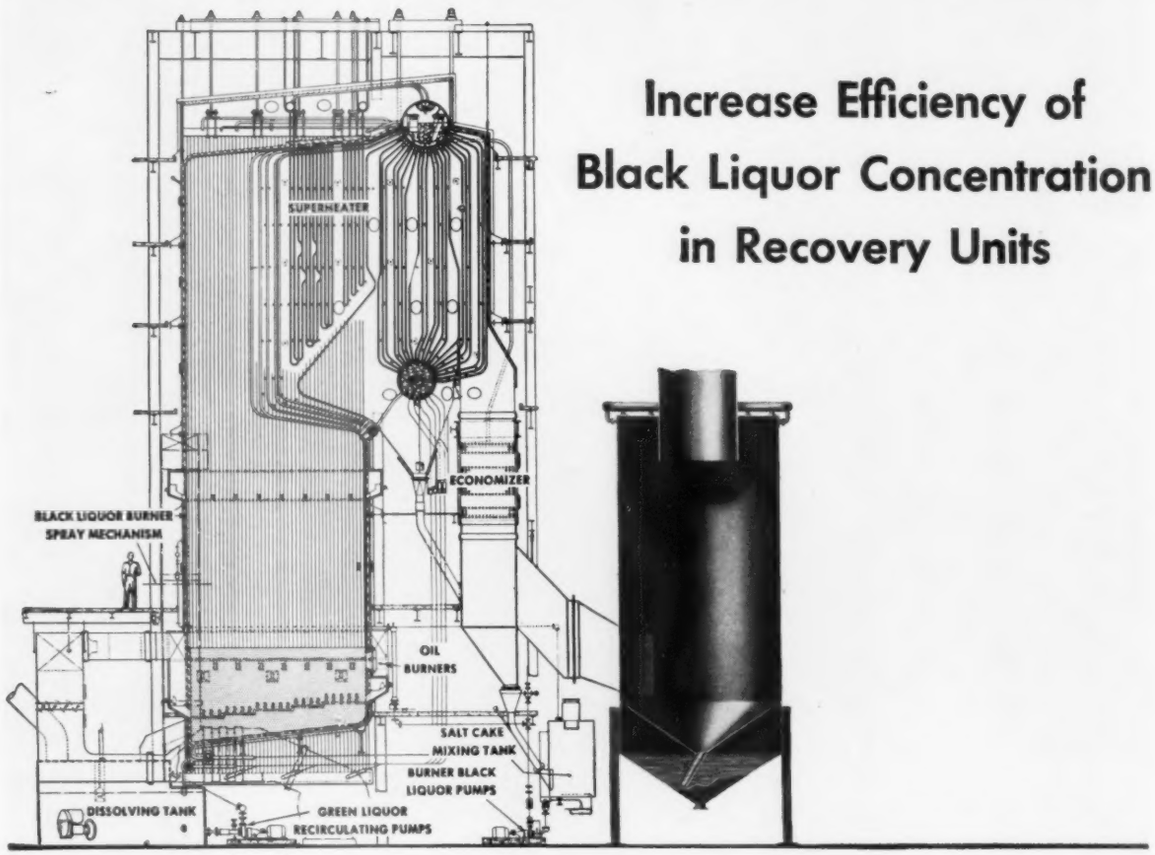
Weyerhaeuser Timber Company renews forest crops by providing continuous natural reforestation. Constant growth is accomplished with seed supplied from blocks of trees left standing to re-seed adjacent harvested areas. The enlightened practice of seeding or planting burned-over land with nursery-grown seedlings also assures healthy harvests for future generations.

Forest life is renewable and continuous. Weyerhaeuser Timber Company, while supplying woodpulp to paper and allied industries, methodically works with Nature's growing cycle in perpetuating forest crops, thus achieving a sustained yield of pulpwood—in a continuing cycle.

**WEYERHAEUSER**

# High Availability . . .
# No Moving Parts . . .
# No Carryover . . .

# B&W CYCLONE EVAPORATORS




## Increase Efficiency of Black Liquor Concentration in Recovery Units

The B&W Cyclone Evaporator utilizes the heat in flue gases to concentrate liquor solids being processed in the liquor recovery system. It requires no moving parts to accomplish this.

Hot flue gases are brought into the Cyclone Separator at high velocity in such a way as to give them a cyclonic motion. Black liquor is sprayed in at several points; the inner shell of the cylinder is continuously washed by the droplets thrown against it by the action of the gas, and water is evaporated during this process. Droplets fall by gravity to the bottom, where they are collected. They then go to the recovery furnace.

Dependable, continuous service is essential in all parts of the recovery unit. B&W Recovery Units, with B&W Cyclone Evaporators, have proved their value for efficient chemical and heat recovery with low-cost operation. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N.Y.

BABCOCK & WILCOX

BOILER DIVISION

P-800

# Mersize®

# for more efficient sizing

**Manufactured at Baxley, Georgia**
**Fieldsboro, New Jersey**
**Montreal, Quebec**

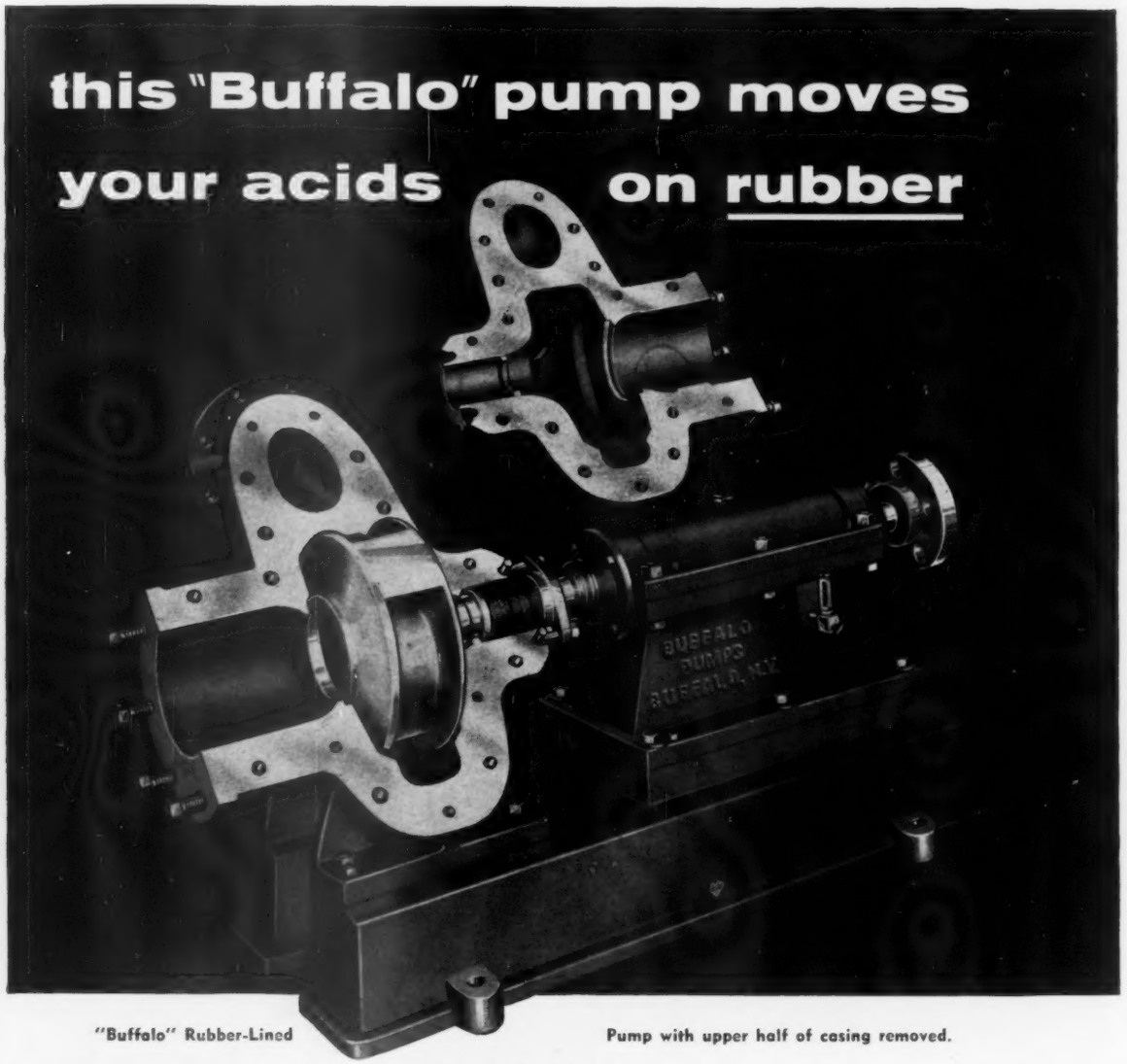
**...with tank wagon stations in principal papermaking areas**

**For any information, call, write or wire**
**MONSANTO CHEMICAL COMPANY,**
**Paper Chemicals Department PC-72,**
**800 North 12th Street, St. Louis 1, Mo.**

MONSANTO®

WHERE CREATIVE CHEMISTRY WORKS WONDERS FOR YOU

# this "Buffalo" pump moves your acids on rubber




"Buffalo" Rubber-Lined Pump with upper half of casing removed.

## —REDUCING COSTLY DOWN-TIME —ELIMINATING EXCESSIVE REPLACEMENTS

If you are pumping highly corrosive liquids, or liquors containing abrasive solids, you may be paying the high price of short pump life. However, where such severe service destroys ordinary pumps in a hurry, "Buffalo" has the answer: *what acids can't touch, they can't hurt.* And in this "Buffalo" Pump, the liquid contacts nothing but rubber, vulcanized to the impeller and passages.

Pump life is multiplied many times and the cost of rubber lining is negligible when compared to the savings in down-time and replacements. Have us mail you information on your particular problem. Remember, Buffalo "Q" Factor* features save you money and troubles when you specify "Buffalo" Chemical Pumps.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

"Buffalo" PUMPS

**BUFFALO PUMPS**

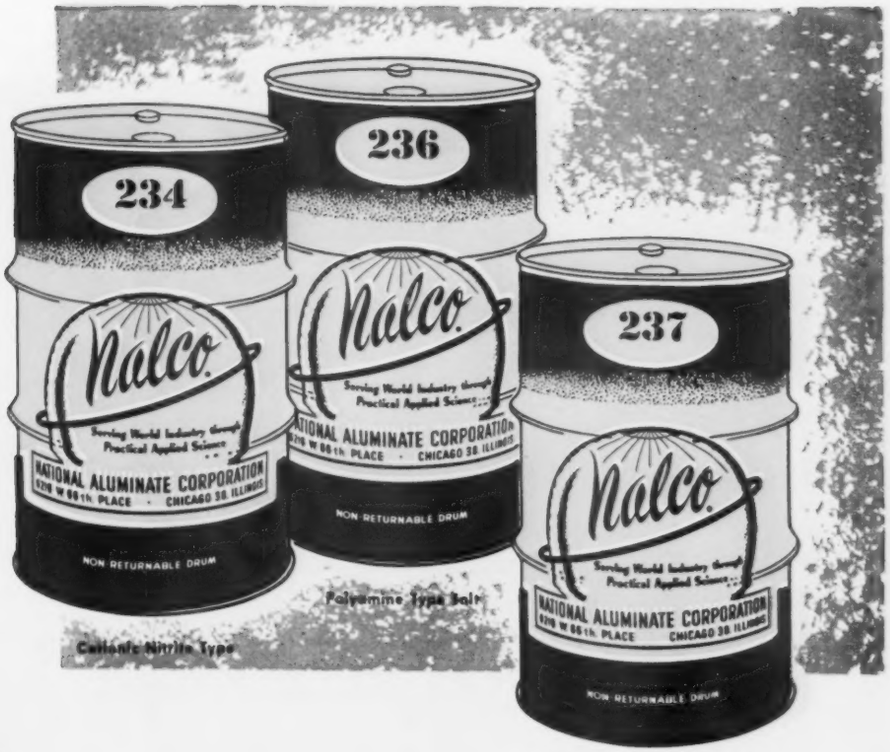
DIVISION OF BUFFALO FORGE COMPANY

220 MORTIMER ST. • BUFFALO, N.Y.

Canada Pumps, Ltd., Kitchener, Ont.

*Sales Representatives in all Principal Cities*

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID




# Nalco ORGANIC LIQUIDS

## for *effective* Slime Control and Dispersion

NON-MERCURIC • NON-PHENOLIC

Three powerful Nalco organic formulations for paper mills give you these important aids toward better paper at lower cost:

- Slime control
- Deposits prevention
- Corrosion protection
- Dispersion of lump-forming masses
- Deodorizing aids
- Fewer breaks
- Cleaner systems
- Less down time
- Better deckering and screening
- Higher production

*Write or phone for complete information.*

**NATIONAL ALUMINATE CORPORATION**

6213 West 66th Place • Chicago 38, Illinois

Telephone: POrtsmouth 7-7240

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IN THE NORTHWESTERN UNITED STATES, HAWAII and ALASKA:
The Flox Company, Inc., Minneapolis 3, Minnesota

IN ITALY: Nalco Italiana, S.p.A.

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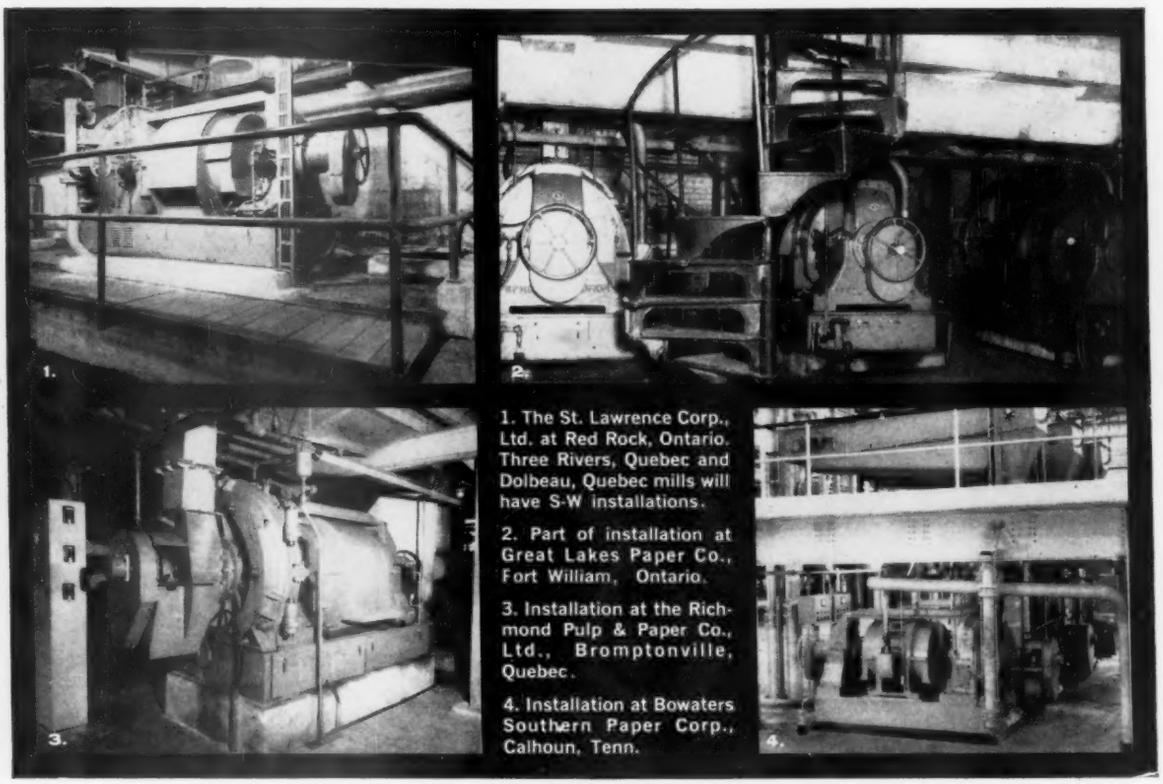
IN WEST GERMANY: Deutsche Nalco-Chemie GmbH

Nalco® PRODUCTS

**Serving the Paper Industry through Practical Applied Science**

*for* ***groundwood rejects*** *refining...*



1. The St. Lawrence Corp., Ltd. at Red Rock, Ontario. Three Rivers, Quebec and Dolbeau, Quebec mills will have S-W installations.

2. Part of installation at Great Lakes Paper Co., Fort William, Ontario.

3. Installation at the Richmond Pulp & Paper Co., Ltd., Bromptonville, Quebec.

4. Installation at Bowaters Southern Paper Corp., Calhoun, Tenn.

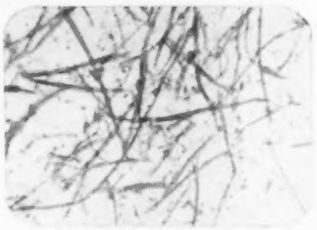
*more and more mills are turning to*

## SPROUT-WALDRON 36-2 REFINERS

Such mills as the ones illustrated plus Fiberboard Products, Inc., Port Angeles, Wash., The Gould Paper Co., Lyons Falls, N.Y., and The Ontario-Minnesota Pulp & Paper Co., Ltd., Kenora, Ontario are only a few of the mills using Sprout-Waldron single rotating disc refiners to produce quality pulp from groundwood rejects.

**THE REASONS: Strong Clean Refined Fiber . . . Economical Power Requirement . . . High Capacity . . . and Low Maintenance.**

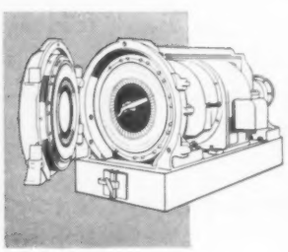
*For mill reports on Sprout-Waldron groundwood rejects refining installations, ask for our file. Write to Sprout, Waldron & Co., Inc.,* **32** *Logan St., Muncy, Pa.*



Northern Spruce fine screen rejects. S-W refined.

Southern Pine bull and fine screen rejects. S-W refined.

S W



**SPROUT-WALDRON**

**PULP MILL EQUIPMENT**

PP/421

Polyethylene because of its low cost, high water vapor resistance, and excellent heat sealing properties, is becoming more and more popular for moisture barrier applications. It coats practically everything used for flexible packaging of industrial or consumer items. It adheres tightly to papers, fabrics, films and foils. It adds strength, too.

Petrothene paper coating resins have these advantages over many other polyethylenes . . .

- ✓ HIGHER PRODUCTION RATES
- ✓ EXCELLENT ADHESION
- ✓ NO ODOR

***Want to learn more about Petrothene? Mail the coupon below.***

Polyethylene coatings add strength and moisture resistance in packaging

chemicals
cosmetics
drugs
foods
hardware
industrial parts
machinery
textiles
tobacco
and many others

**U.S.I. INDUSTRIAL CHEMICALS CO.**
*Division of National Distillers Products Corporation*
**99 Park Avenue, New York 16, N. Y.**

I would like more information on PETROTHENE Polyethylene.

My application is _____

Please ☐ send literature

☐ ask a technical representative to call.

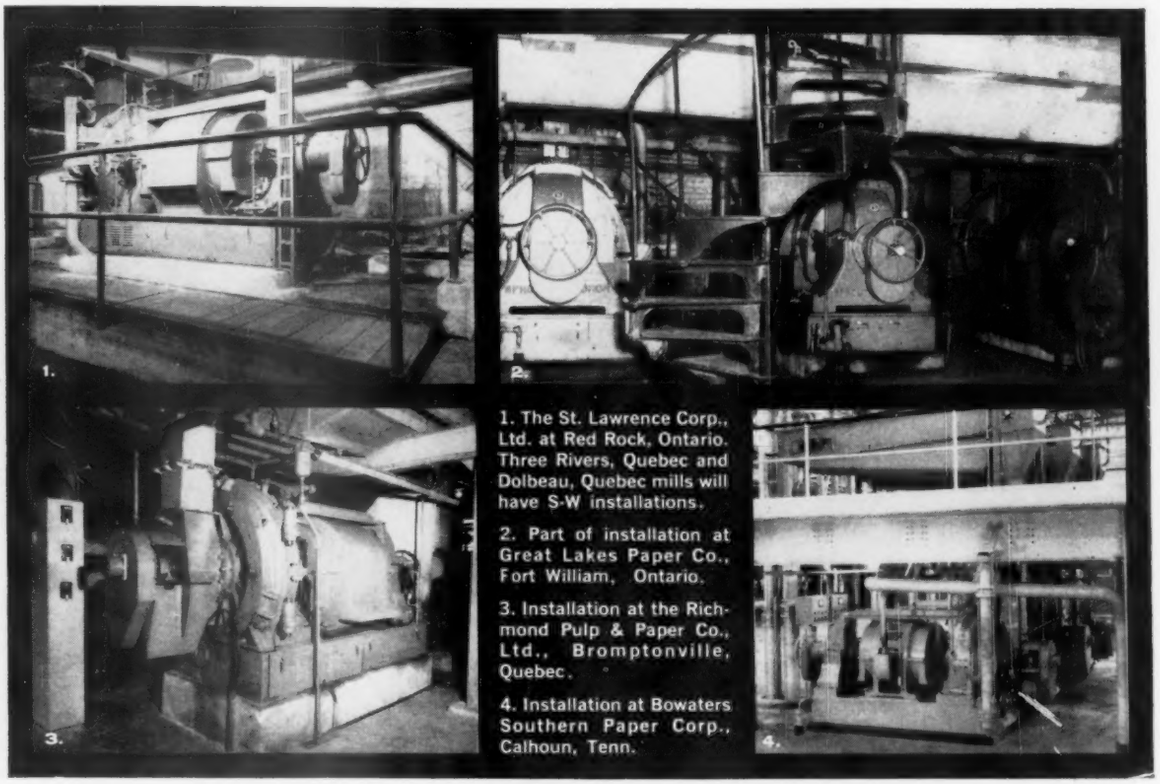
NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

*for* ***groundwood rejects*** *refining...*



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*more and more mills are turning to*

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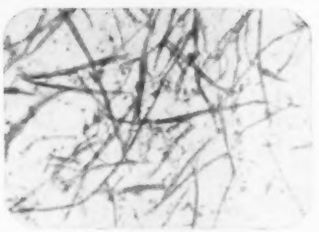
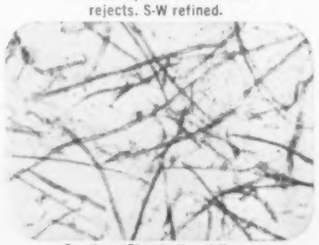
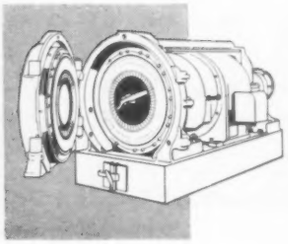


Northern Spruce fine screen rejects. S-W refined.



Southern Pine bull and fine screen rejects. S-W refined.

S W



**SPROUT-WALDRON**

**PULP MILL EQUIPMENT**

PP/421

42 LB. BLEACHED WET-STRENGTH KRAFT PAPER
with an 8 lb. (.55 mil) coating of PETROTHENE®
203 polyethylene resin.
U. S. Industrial Chemicals Co.
Division of National Distillers Products Corporation

# For an excellent MOISTURE BARRIER coat with PETROTHENE®

## POLYETHYLENE RESIN

Details on Back

Polyethylene because of its low cost, high water vapor resistance, and excellent heat sealing properties, is becoming more and more popular for moisture barrier applications. It coats practically everything used for flexible packaging of industrial or consumer items. It adheres tightly to papers, fabrics, films and foils. It adds strength, too.

Petrothene paper coating resins have these advantages over many other polyethylenes . . .

- ✓ HIGHER PRODUCTION RATES
- ✓ EXCELLENT ADHESION
- ✓ NO ODOR

***Want to learn more about Petrothene? Mail the coupon below.***

Polyethylene coatings add strength and moisture resistance in packaging

- chemicals
- cosmetics
- drugs
- foods
- hardware
- industrial parts
- machinery
- textiles
- tobacco
- and many others

**U.S.I. INDUSTRIAL CHEMICALS CO.**

*Division of National Distillers Products Corporation*
**99 Park Avenue, New York 16, N. Y.**

I would like more information on PETROTHENE Polyethylene.

My application is _____

Please ☐ send literature

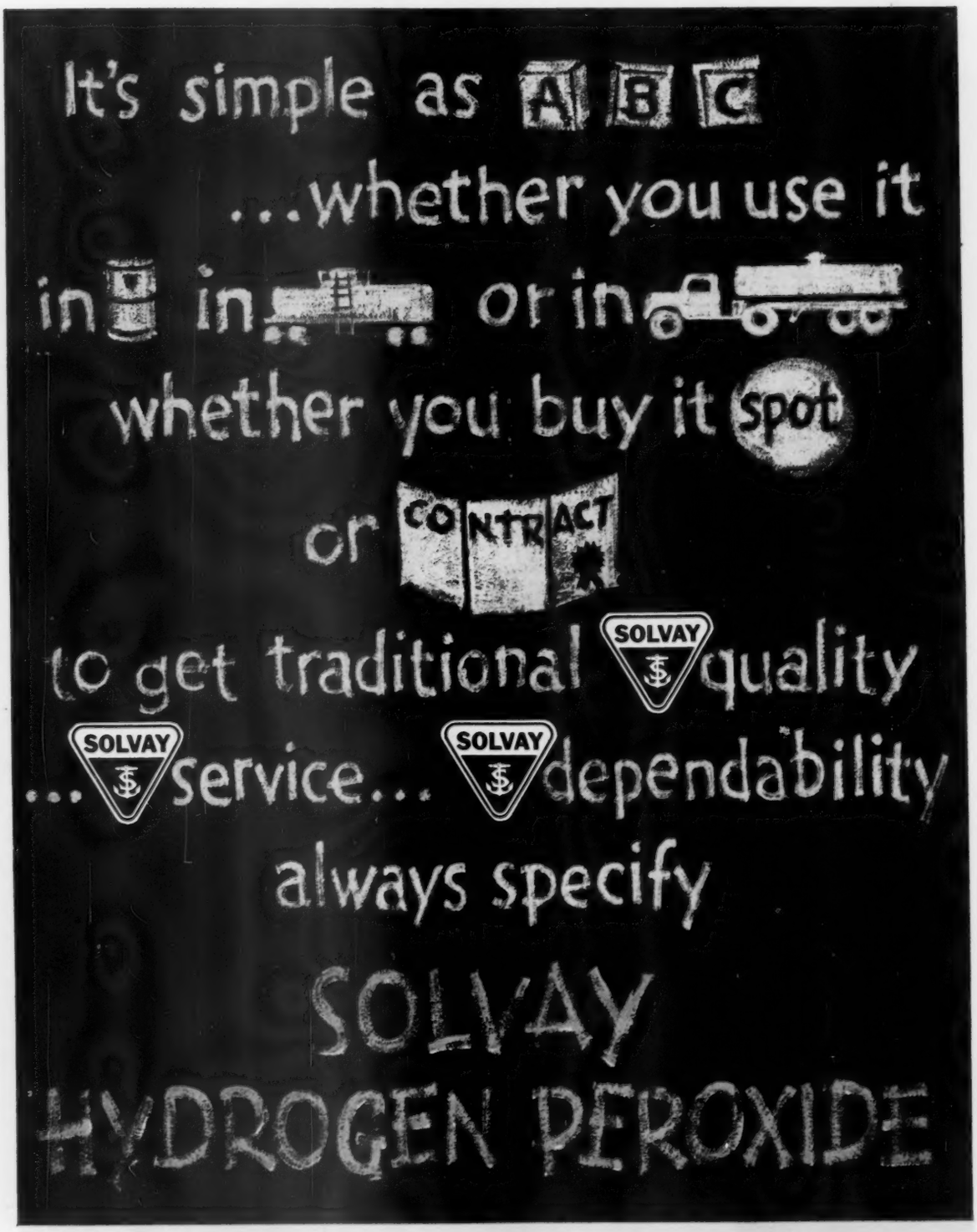
☐ ask a technical representative to call.

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

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Potassium Carbonate • Calcium Chloride • Chlorine
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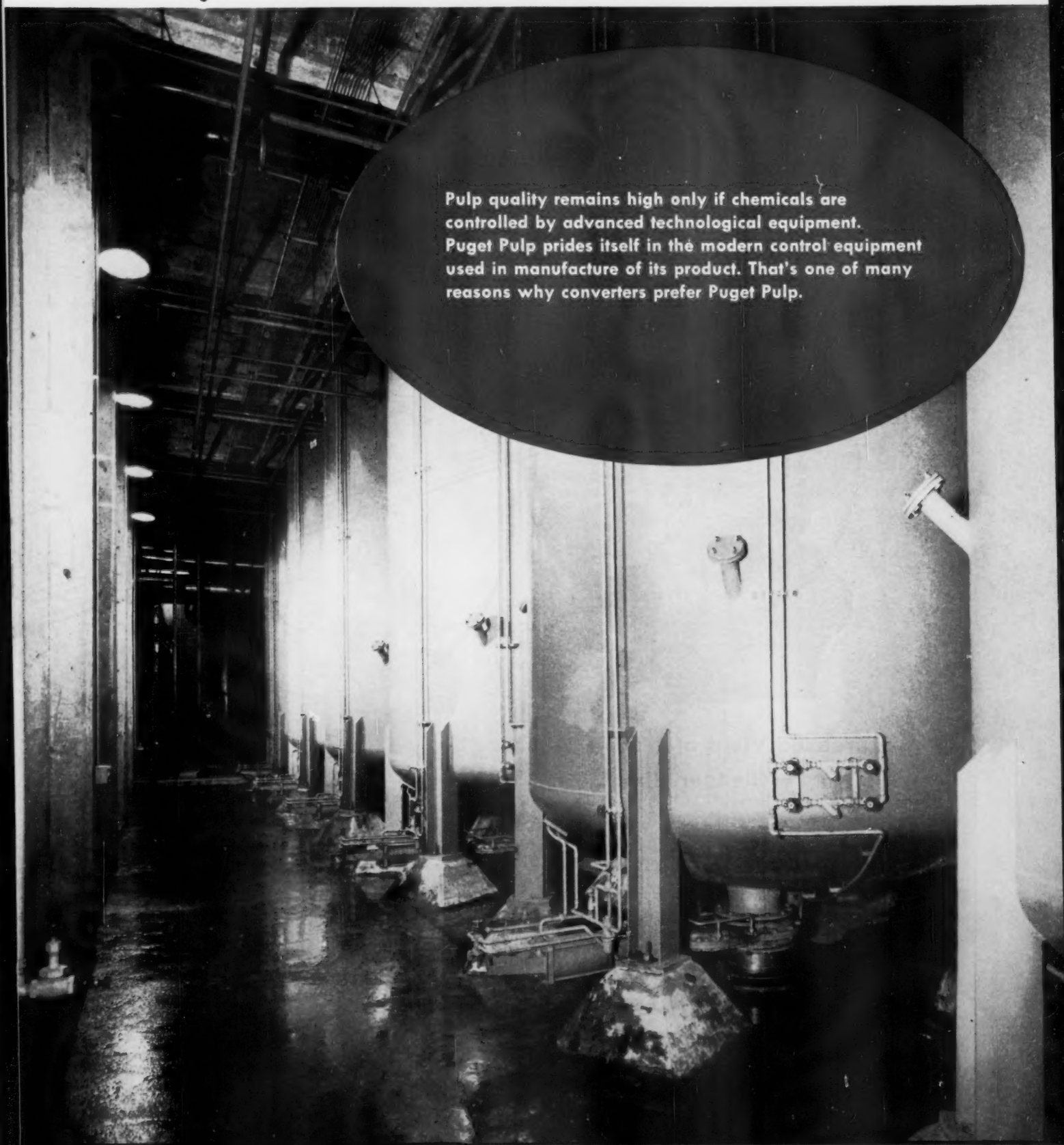
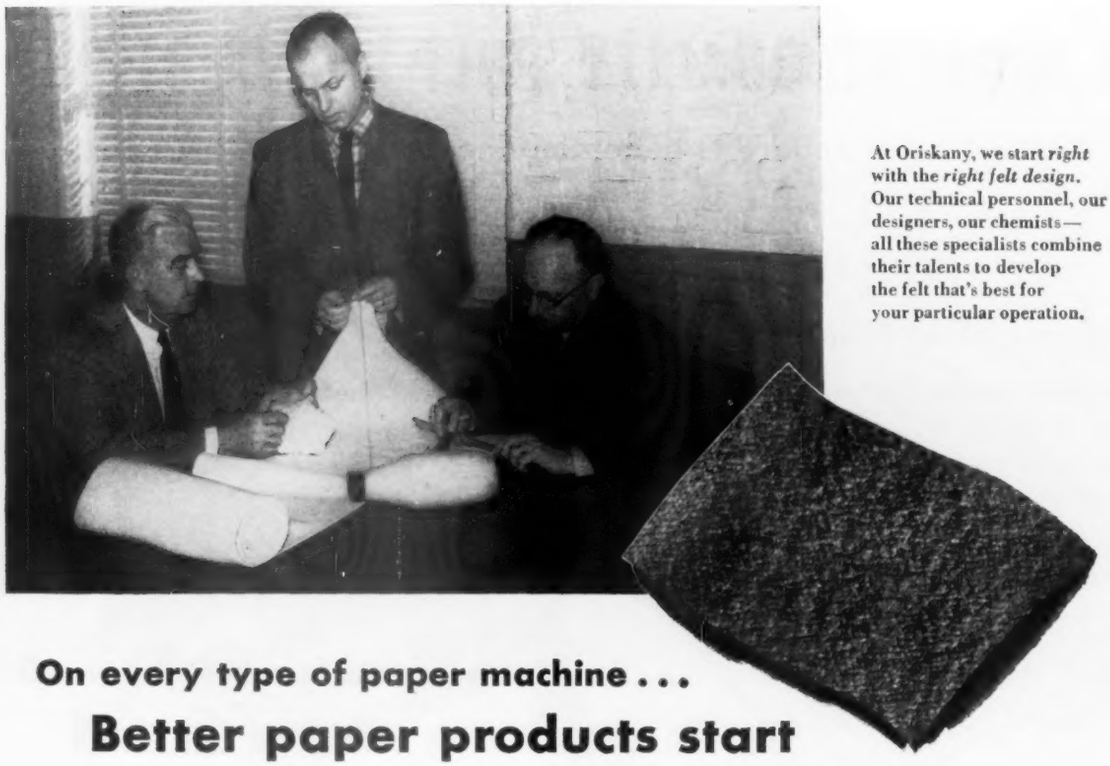
# Only the Best goes into Puget Pulp



Pulp quality remains high only if chemicals are controlled by advanced technological equipment. Puget Pulp prides itself in the modern control equipment used in manufacture of its product. That's one of many reasons why converters prefer Puget Pulp.

**PUGET SOUND**
**PULP AND TIMBER CO.**
BELLINGHAM, WASHINGTON



At Oriskany, we start *right* with the *right felt design.* Our technical personnel, our designers, our chemists—all these specialists combine their talents to develop the felt that's best for your particular operation.

## On every type of paper machine . . .

# Better paper products start with correct FELT design!

Whether you are running the finest tissue or the heaviest board, you'll get more uniform production when the felt you use is *specifically designed* for your machine and the type of paper product you are making. At Oriskany, your particular requirements are analyzed by our production staff, and your felt is designed with the proper characteristics for finish and drainage and fiber strength to produce the best results on your machine operation. We can also treat the felt with our exclusive chemical formulas to combat unusual conditions.

**Do you have a special felt problem?** Talk to the competent Oriskany Sales Engineer when he calls at your mill. He can offer you sound, helpful advice, and he can suggest a design improvement or one of our many chemical treatments to correct your specific felt problem.

*First choice—because they last*

**Oriskany**

**WATERBURY FELTS**

**H. WATERBURY and SONS COMPANY • ORISKANY, NEW YORK**

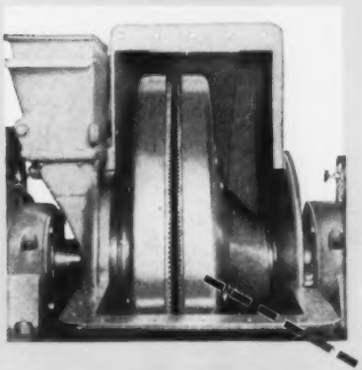
# Are you getting all you can from your screen rejects?

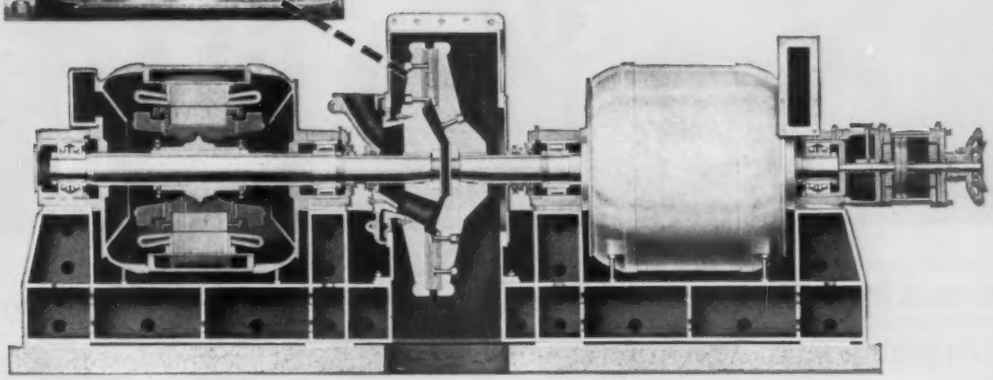
It's no secret that mills are anxious to salvage screen rejects. The catch is how to do it most efficiently—how to get the best fiber qualities from apparent waste. The answer is supplied by the Bauer Double Revolving Disc Refiner shown below.

Pulp from these refiners is long fibered, uniform and of high quality. Since the first Bauer Double Disc Refiner was put into operation on screenings in 1928, users have repeatedly stated that application of this equipment actually provides tons of extra pulp every day! With this increase in pulp yield, a Bauer installation quickly pays for itself over and over again.

No other piece of equipment produces the same high quality fiber from rejects as the Bauer Double Disc Refiner. Where high quality fiber is not so essential our Single Disc Refiner provides economy. Ask the Bauer representative which meets *your* requirements.

**BAUER DOUBLE DISC REFINER.** The high differential speed of two revolving discs provides fiberizing action at its best, separating fiber bundles but maintaining fiber length.





## The Bauer Bros. Co.
Springfield, Ohio

**THE BAUER BROS. CO.**
1706 SHERIDAN AVE., SPRINGFIELD, OHIO

☐ Send me data on the Double Disc Refiner.
☐ Have a Bauer representative see me about screen rejects.

NAME _____

TITLE _____

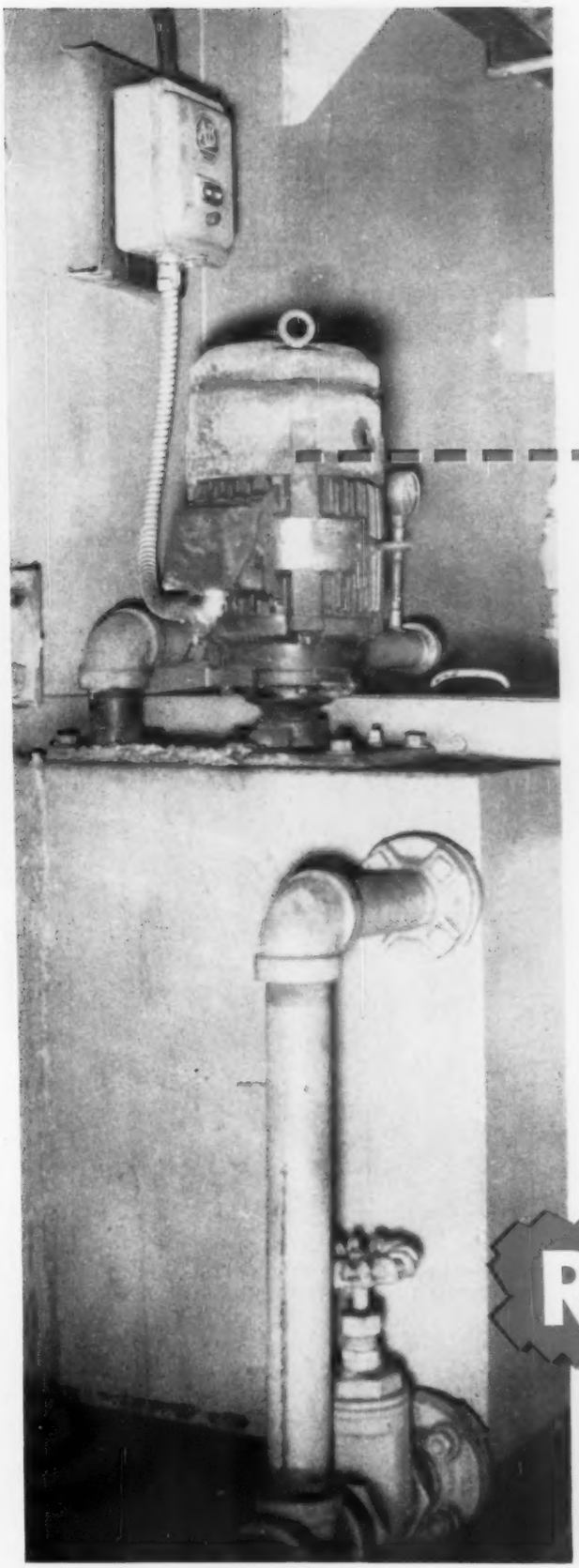
COMPANY _____

ADDRESS _____

Bauer

Felt making starts here . . . with a superintendent, a paper machine, and the Appleton man. The first step in delivering satisfactory felt performance is understanding your requirements. Then, accurately interpreting them to our research, design and production people. The Appleton man who calls on you is qualified to do this exacting job. We are confident you will agree with our high estimate of him. Appleton Woolen Mills — *a working partner with the paper industry* — Appleton, Wisconsin.

**Appleton felts**



# RELIANCE solves motor corrosion problem

This Reliance Corrosion-Proof Motor is operating a pump which circulates cleaning solution through a tank containing metal parts. The motor is subjected to corrosive vapors and liquids each time a basket of parts is removed. BUT THIS MOTOR WILL NOT CORRODE.

The solid cast-iron housing, including the fan cover, will withstand corrosive service indefinitely. Wiring identification is preserved on a stainless steel name plate. A threaded outlet is provided on the water tight conduit box, and motor leads are molded into a neoprene gasket that completely seals off the windings from the conduit box. A neoprene or non-ferrous shaft slinger seals the only other frame opening.

These and many other features give you a motor with a built-in corrosion protection. Why not install this superior design now and save many replacement dollars in the years ahead.

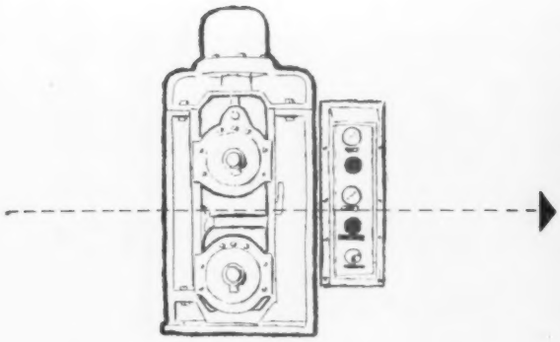
**Write for bulletin B-2406 for complete design details.**

B-1534

**RELIANCE ELECTRIC AND ENGINEERING CO.**

**DEPT. 183A, CLEVELAND 17, OHIO**
**CANADIAN DIVISION; WELLAND, ONTARIO**

**Sales Offices and Distributors in Principal Cities**



# get uniformly smooth board on all your orders with a MANCHESTER SMOOTHING PRESS

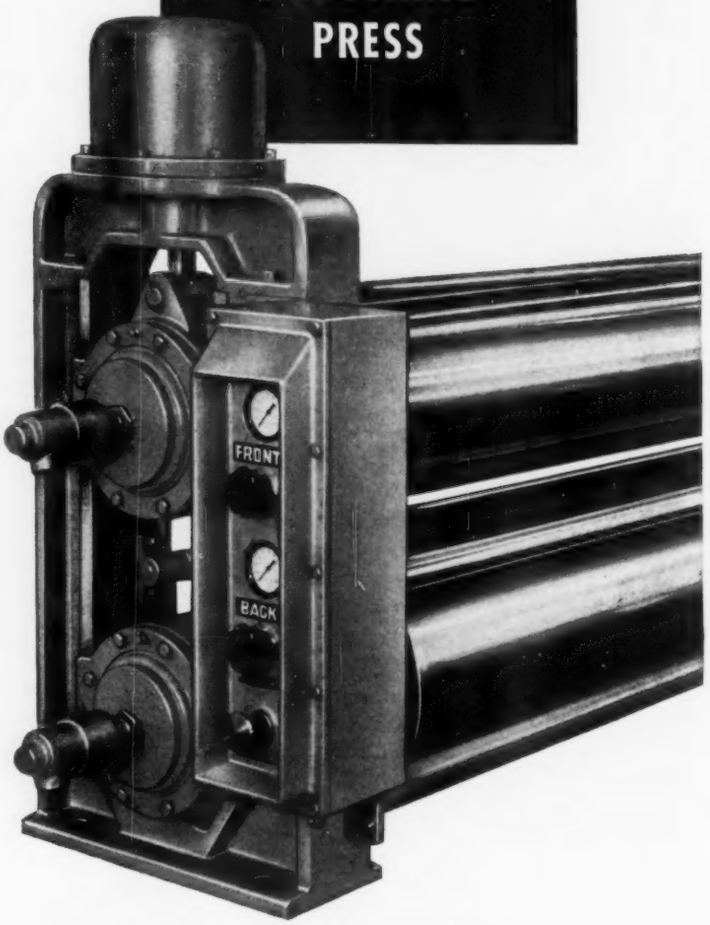
**Smooth board sells and stays sold**

If board finish is a problem with you consider the Manchester Smoothing Press.

It is designed for top efficiency, for ease and sureness of operation. There are no unnecessary moving parts and the press is completely air-controlled.

From routine press runs to exacting multi-color work, a Manchester Smoothing Press will deliver uniform quality of board finish that will win customers and hold them everytime.

This modern press can be installed quickly and put to work earning extra profits for your mill. Get all the facts. Write today.




THE MANCHESTER SMOOTHING PRESS—
ENGINEERED TO MEET YOUR INDIVIDUAL REQUIREMENTS.

**THE MANCHESTER MACHINE COMPANY**
MIDDLETOWN, OHIO

MMC

SPECIALISTS
IN DESIGNING
AND BUILDING
PAPER MILL
MACHINERY

# Portrait

## of the "Backbone" of a Papermaker's Felt

Pictured here is what might be called the "backbone" of a papermaker's felt. Actually, it is a single wool fiber, magnified approximately 800 times. Twisted together with countless similar fibers, it provides the yarn from which the felt is woven.

Look closely . . . and note the overlapping scales found only on certain animal fibers, which permit what feltmakers call "fulling". It is during this essential operation that our *custom-engineered* fabrics become felts.

Huyck's study of wool fibers and their "fulling", or felting characteristics, results in more uniform, stronger and better fitting felts. It is research of this type, backed by the expenditure of a very high percentage of our sales dollar, which has established Huyck's leadership and makes *NEW HUYCK FELTS* a must in the production of better paper at lower felt cost per ton.

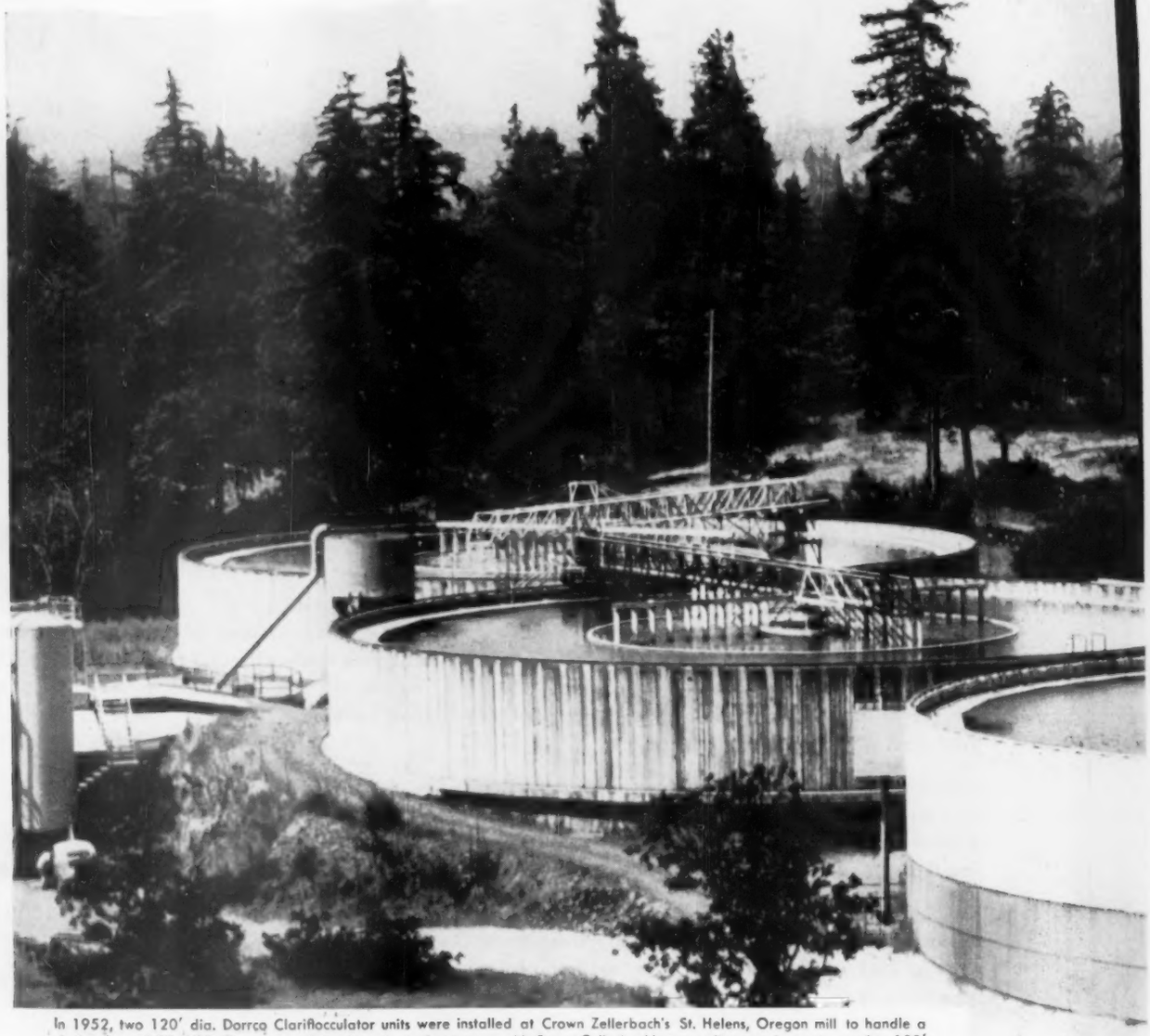
NEW!

**HUYCK FELTS**

FIRST IN QUALITY FIRST IN SERVICE

F. C. HUYCK & SONS • Established 1870
Rensselaer, New York • Alicevile, Alabama
Peterborough, New Hampshire • Cavendish, Vermont
IN CANADA: KENWOOD MILLS LTD.
Arnprior, Ontario • Established 1918

# CROWN ZELLERBACH
## Adds Third
# DORRCO CLARIFLOCCULATOR
## to St. Helens, Oregon Mill



In 1952, two 120′ dia. Dorrco Clariflocculator units were installed at Crown Zellerbach's St. Helens, Oregon mill to handle a design flow of 20 MGD. Three years later, in order to keep pace with Crown Zellerbach's expanding requirements, another 120′ dia. Clariflocculator was added, increasing the total design flow to 30 MGD.

## . . . to handle increased process requirements . . . and to reduce color and remove turbidity of the process water

Due to the location of the mill at the fork of the Willamette River and the Columbia River, obtaining clear, process water for production of bleach pulp has been a serious problem for the St. Helen's Division of Crown Zellerbach. This problem is further aggravated as raw water characteristics fluctuate widely because of the tidal action of the Pacific Ocean. With the installation of three 120′ dia. Type H Dorrco Clariflocculator units, 30 MGD of finished water is produced containing less than 5 ppm color and 5 ppm turbidity.

These combination units providing flocculation and clarification in a single tank at conventional rates of flow were ideally suited for the changing conditions at the St. Helens Division of Crown Zellerbach Corporation.

For more information on the complete line of Dorr-Oliver equipment for water treatment, write for Bulletin No. 9141. Dorr-Oliver Incorporated, Barry Place, Stamford, Connecticut, U.S.A.

Clariflocculator is a trademark of Dorr-Oliver Incorporated, Reg. U. S. Pat. Off.

*Every day, over 8½ billion gallons of water are treated in Dorr-Oliver equipment.*

DORR-OLIVER
INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
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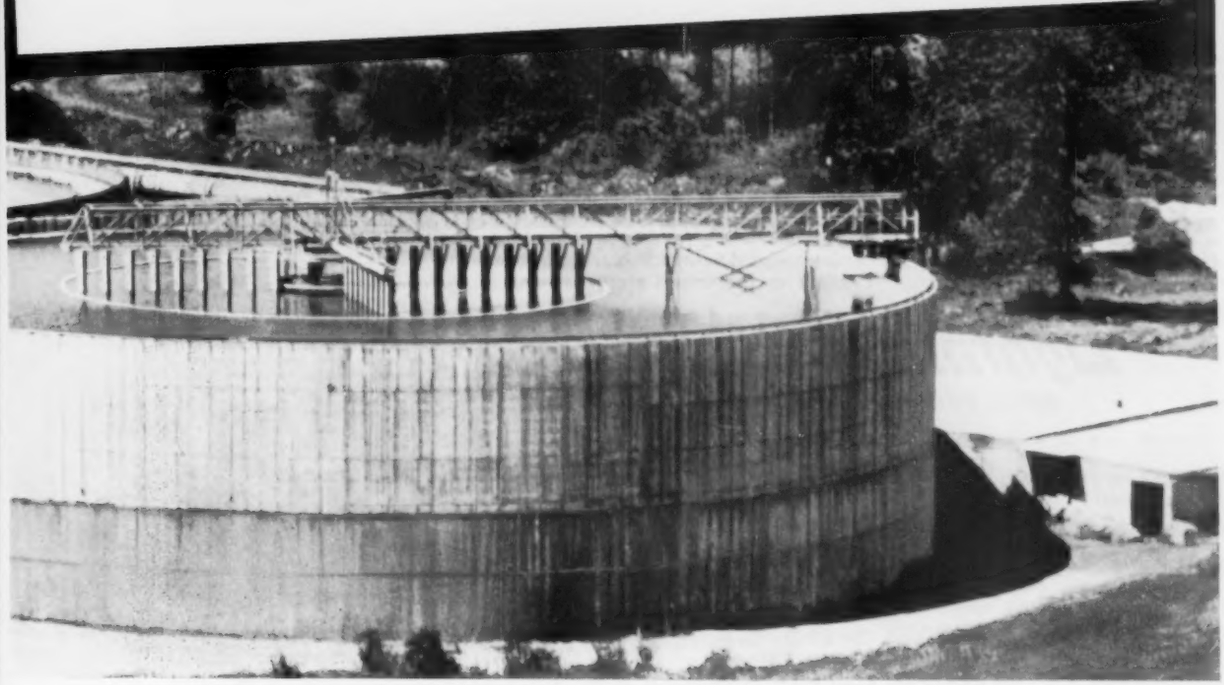
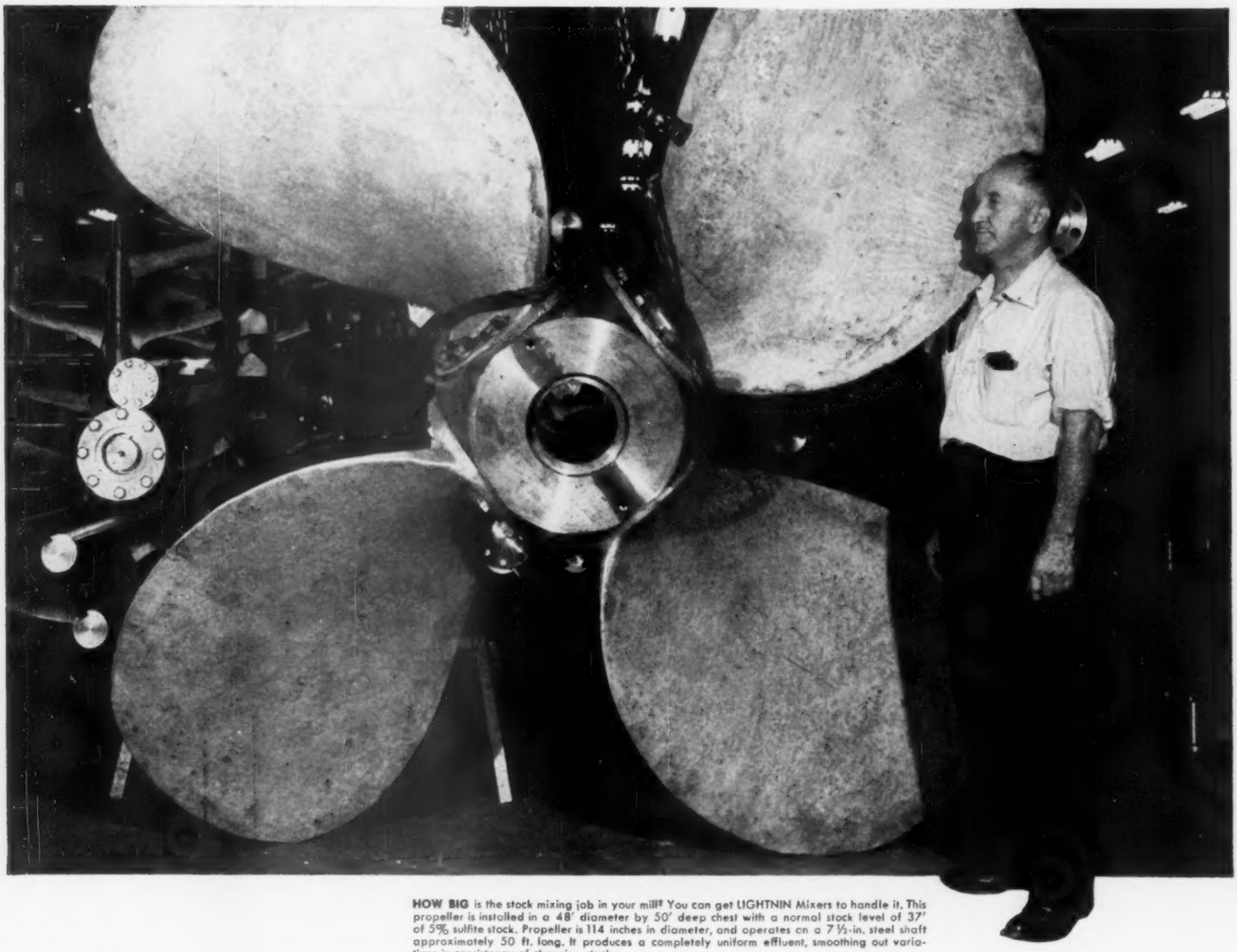




**HOW BIG** is the stock mixing job in your mill? You can get LIGHTNIN Mixers to handle it. This propeller is installed in a 48' diameter by 50' deep chest with a normal stock level of 37' of 5% sulfite stock. Propeller is 114 inches in diameter, and operates on a 7 ½-in. steel shaft approximately 50 ft. long. It produces a completely uniform effluent, smoothing out variations in consistency of charging stocks.

# *How to get*
# **uniform stock** *out of a big chest*

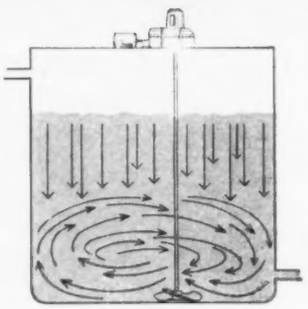
You can stop stratification of stock, even in the largest chests, with LIGHTNIN "custom power" mixing.

This mixing method, proved in more than 35 mills, accurately equates mixer horsepower with the job you want to do.

You get the exact level of mixing that's best for what you want to accomplish in one chest or in a series of chests. There's no guesswork. Mixing results are fully predictable, unconditionally guaranteed.

You can get LIGHTNINS for your stock chests in sizes up to 500 HP. At each power level, there's a choice of impeller sizes and speeds to match your mill economics.

For quick, competent help on stock chest mixing that does what you want it to, call your LIGHTNIN Mixer representative. Or write us direct.



**USE THIS MIXING METHOD** to solve the problem of stock stratifying in very large chests. The LIGHTNIN Mixer is selected to keep uniform the entire lower portion of the chest. Stock passes in plug-like flow from top of chest into mixed zone. Stock flow path, residence time in chest, and effluent consistency are fully predictable.

## Lightnin® Mixers

**MIXCO fluid mixing specialists**

**FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:**

- ☐ B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- ☐ B-103 Top entering; propeller types: ¼ to 3 HP
- ☐ B-108 Portable: ⅛ to 3 HP
- ☐ B-104 Side entering: 1 to 20 HP
- ☐ B-112 Laboratory and small-batch production types
- ☐ B-109 Condensed catalog showing all types
- ☐ B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- ☐ B-107 Data sheet for figuring general mixer requirements
- ☐ Paper stock mixing data sheet

Check, clip, and mail with your name, title, company address to:

**MIXING EQUIPMENT Co., Inc., 141-c Mt. Read Blvd., Rochester 11, N.Y.**

*In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.*

**THIS LIGHTNIN MIXER DRIVE** with the above propeller delivers 200 HP to the stock with high efficiency. Newly installed, it duplicates an existing LIGHTNIN installation in this same mill which has produced completely satisfactory results for the last 5 years.

# WOOD PULP
# PAPER

Offices and representatives
in 60 cities in the United States, Europe,
Latin America, Africa, and Asia

## BULKLEY DUNTON
ORGANIZATION
**295 MADISON AVENUE, NEW YORK 17, N. Y.**

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BULKLEY DUNTON CELLULOSE EXPORTS, INC. • BULKLEY DUNTON, LTD. • BULKLEY DUNTON A/B
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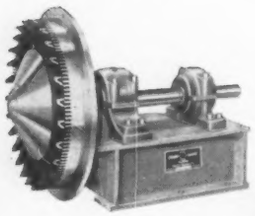
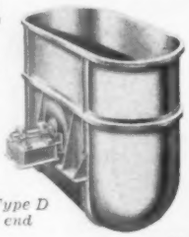
# MORDEN



Model C "Slush-Maker" pulping unit

## Around the world, the

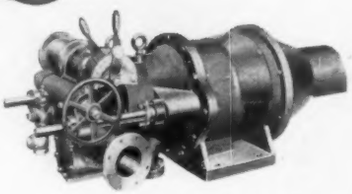


"Slush-Maker" Type D continuous dry end

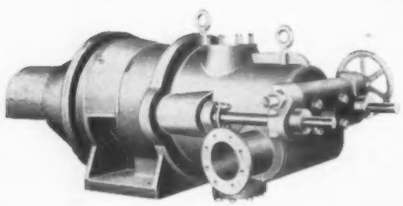
## name "Morden"

"Slush-Maker" Type A batch or continuous

## stands for specialists

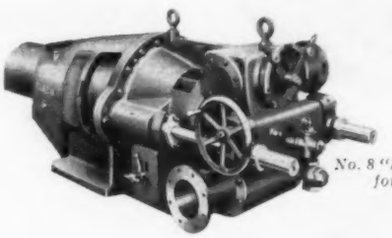


No. 6 "Stock-Maker" for beating



"Stuff-Maker" for jordaning

## in quality and in service.



No. 8 "Stock-Maker" for beating

Send for your copy of the Morden Catalog, and ask for an in-the-mill discussion of your stock preparation requirements.

**MORDEN MACHINES COMPANY**

**3420 S. W. MACADAM AVENUE, PORTLAND, OREGON**

*UNITED STATES REPRESENTATIVES — Midwest: Dan B. Chapman, Appleton, Wis.; Northeast: Orton Corporation, Fitchburg, Mass.; South: Brandon Sales, Greenville, S. C.*

*for uniform shades and all-round fastness*

**A COMPLETE LINE OF NATIONAL**

# *direct dyes*

For fine papers National direct dyes are the recommended choice of many experienced paper makers.

Our excellent range of direct dyes includes many with good resistance to light, bleeding, acid and alkalis, and they are convenient to apply.

National direct paper dyes are especially useful for producing full shades of cover and poster stocks and serving as bottom colors for basic dyes in order to obtain deeper shades.

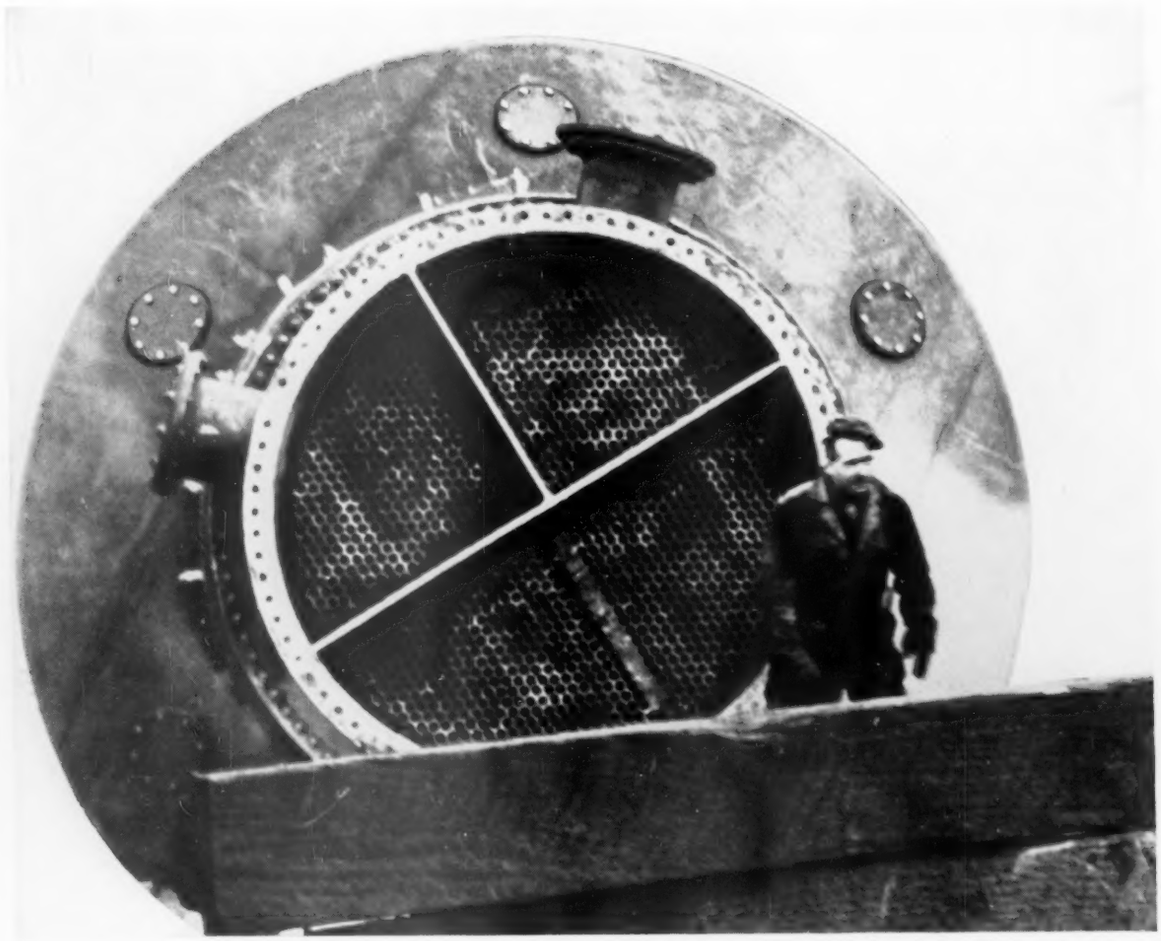
We'll be glad to supply samples and work with you in matching required shades or whenever color problems arise.

**NATIONAL® PAPER DYES**

**NATIONAL ANILINE DIVISION** ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Columbus, Ga Greensboro Los Angeles New Orleans Philadelphia Portland, Ore. Providence Richmond San Francisco Toronto

Allied Chemical



# 5½ miles of cost-saving corrosion control with *Carpenter* Stainless Tubing

Nearly 30,000 feet of Carpenter Stainless Tubing are installed in this 35-ton surface condenser specially designed for condensing blow-down steam from digesters in a paper mill.

Cost-saving, trouble-free corrosion control is only one of the many advantages you get with Carpenter Stainless Tubing. The industry's top quality control processes assure an extra measure of uniformity, quality and perfection in every shipment. Faster, easier fabrication of Carpenter Stainless Tubing makes any tubing or re-tubing job more economical.

Ask your Carpenter Distributor for full information on the new non-destructive quality control test that assures better-than-ever quality in Carpenter Stainless Tubing.

MEMBER

**The Carpenter Steel Company**
**Alloy Tube Division, Union, N. J.**

*Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"*

**Carpenter**

**Stainless Tubing & Pipe**

## No long and costly "down time" involved

Motors can be interchanged or replaced *in minutes* with the all-steel, All-Motor type FALK Motoreducer. No long and costly "down time" is involved in making the change!

Best of all, replacement is not limited to original make of motor—new NEMA frames may be substituted for old. This versatile Motoreducer operates with any make, speed or type of standard foot-mounted motor within its AGMA rating. No modification, no special shaft, no "partial" motor required.

In addition to unmatched motor interchangeability, this dependable gear drive—the "work horse of industry"—offers: widest choice of output-shaft position (horizontal, vertical, right-angle)...any output-shaft connection...any mounting, including wall and ceiling...standard speed range from 1.5 rpm to 1430 rpm. All these advantages, plus proved efficiency, low maintenance and extra-long life, make the All-Motor type FALK Motoreducer your best buy for any job requirement.

Furnished in sizes up to 75 hp with any make, style or type of motor; or, *without a motor if desired.* FALK Motoreducers are available from convenient factory, field or distributor stocks, from coast to coast.

**Write for Bulletin 3100**

**THE FALK CORPORATION, MILWAUKEE, WISCONSIN**

***MANUFACTURERS OF:***

- Motoreducers
- Speed Reducers
- Flexible Couplings
- Shaft Mounted Drives
- High Speed Drives
- Special Gear Drives
- Single Helical Gears
- Herringbone Gears
- Marine Drives
- Steel Castings
- Weldments
- Contract Machining

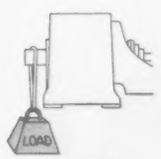
**FALK**

**...a good name in industry**

## FALK "IN-BUILT" FACTORS assure full dependability—better service—longer life

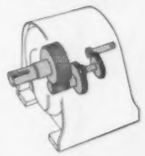
**ALL-STEEL HOUSINGS**

Rugged, strong, rigid ...all parts heavy steel plate, formed and welded in the Falk Weld Shop.



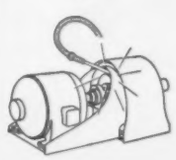

**LARGE OVERHUNG LOAD CAPACITY**

Large shafts, oversize bearings...rigid mountings with wide bearing spans to handle maximum loads.



**PRECISION GEARING**

Heat-treated alloy steel gearing, precision cut and shaved after heat treatment to eliminate distortion.



**SEALED HOUSINGS**

Splashproof, dustproof, oiltight. Dual closures and one-way vents keep oil in, dust and moisture out.

# BRISTOL Metagraphic
## offer broadest measurement

***For temperature, pressure, vacuum, differential pressure, flow,***

**BRISTOL METAGRAPHIC PNEUMATIC TRANSMITTERS**

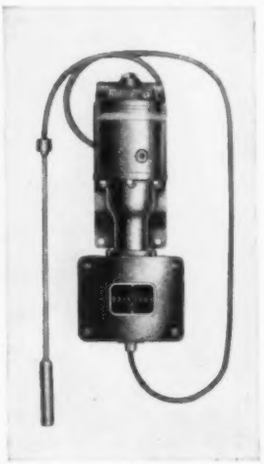
are the measuring centers of the Metagraphic transmission system. They are constructed for friction free operation, and provide superior control and high speed transmission, with low air consumption. Metagraphic transmitters are available for measuring practically any variable encountered in industrial processing.

**PRESSURE, VACUUM**

Ranges as low as 0 to 3" of water; as high as 0 to 10,000 psi.

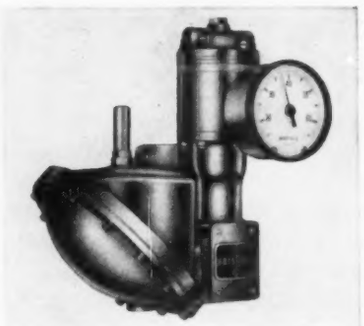
**COMPOUND PRESSURE AND VACUUM**

Ranges from 15" mercury to 0 to 150 psi.



**TEMPERATURE**

Ranges as low as —100°F, as high as 5000°F.

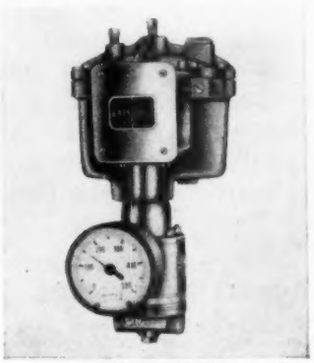


**ABSOLUTE PRESSURE**

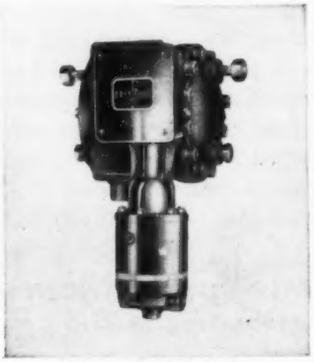
Ranges as low as 0 to 5mm of mercury and up. Available in bronze or stainless steel.

**DIFFERENTIAL PRESSURE AND FLOW.** Ranges as low as 0 to 1" water and up. Offered in a variety of meter bodies to satisfy almost any requirement or preference, including:

MERCURY MANOMETER



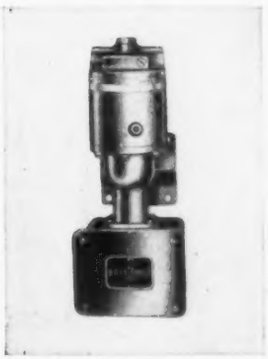
BELL-TYPE ELEMENT



DRY-TYPE METER BODY

# pneumatic transmitters
## range and widest coverage

### *liquid level, and mechanical motion*

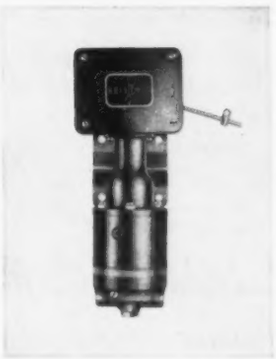


**LIQUID LEVEL**

Full range of applications from water and other liquids in tanks, open and closed vessels of all kinds; weirs, canals and reservoirs—pressure and bubbler types—for corrosive conditions and solid-bearing liquids.

**MECHANICAL MOTION**

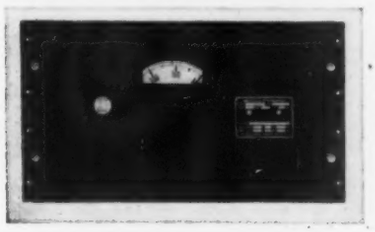
For measuring and transmitting any mechanical motion such as float motion, gate position, or valve stem action, as well as others.



***Indicators can be furnished on all transmitters.***

**MEASURE ELECTRONICALLY, TRANSMIT PNEUMATICALLY**

with Dynamaster Electronic Potentiometer Transmitter. Input signal may be a voltage, current or change in resistance, capacitance, or inductance. Output is a pneumatic signal proportional to measurement. Ideal for pH, speed, viscosity, density, strain, force, dew point and other measurements requiring electronic transducer.



### Measure almost any variable, transmit universal 3-15 psi* pneumatic signal to a recording receiver or controller

Get the widest variety of pneumatic transmitters on the market in the Bristol 650 Metagraphic line.

They offer you more models and a variety of lower ranges, higher ranges and easily adjustable partial ranges that no other line of pneumatic transmitters can match. Check these Metagraphic advantages:

**Easy maintenance.** Spare parts are cut to a minimum with the Metagraphic transmitter. The reason: all transmitters are basically the same; only the measuring elements and their housings differ.

**Uses standard Bristol measuring elements.** The same standard, highly developed and proven Bristol measuring elements that are used in Bristol recording and controlling instruments are used in the Metagraphic transmitter. They are the result of 68 years of research and experience in building hundreds of thousands of instruments for practically every application, and incorporate the latest engineering developments in the field. These high-torque measuring elements, with wide-angle travel, give powerful, positive operation.

**Rugged, weatherproof.** Bristol Metagraphic transmitters are extremely rugged. They are weatherproof and can be installed anywhere.

**Range easily adjustable.** The locations of partial ranges are easily adjustable through wide range limits on most transmitters. The span of a given transmitter can also be changed without difficulty. It is therefore no longer necessary to know and specify the exact range in advance, when ordering transmitters.

Thousands of Bristol Metagraphic transmitters are already in operation, giving reliable, trouble-free service. Find out how their advanced design can simplify your measurement, recording, and control problems. Write the Bristol Company, 142 Bristol Road, Waterbury 20, Conn. 6.83

**Other transmitting pressures also available.*

BRISTOL'S

# BRISTOL

*TRAIL-BLAZERS IN PROCESS AUTOMATION*

**AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS**

*John W. Bolton & Sons, Inc.*
*and*
*The Emerson Manufacturing Company, Division*
*extend congratulations to*

*Crown Zellerbach Corporation*

*on the opening of its ultra-modern Multi-wall*
*Bag and Kraft Board Mill, Antioch, California*

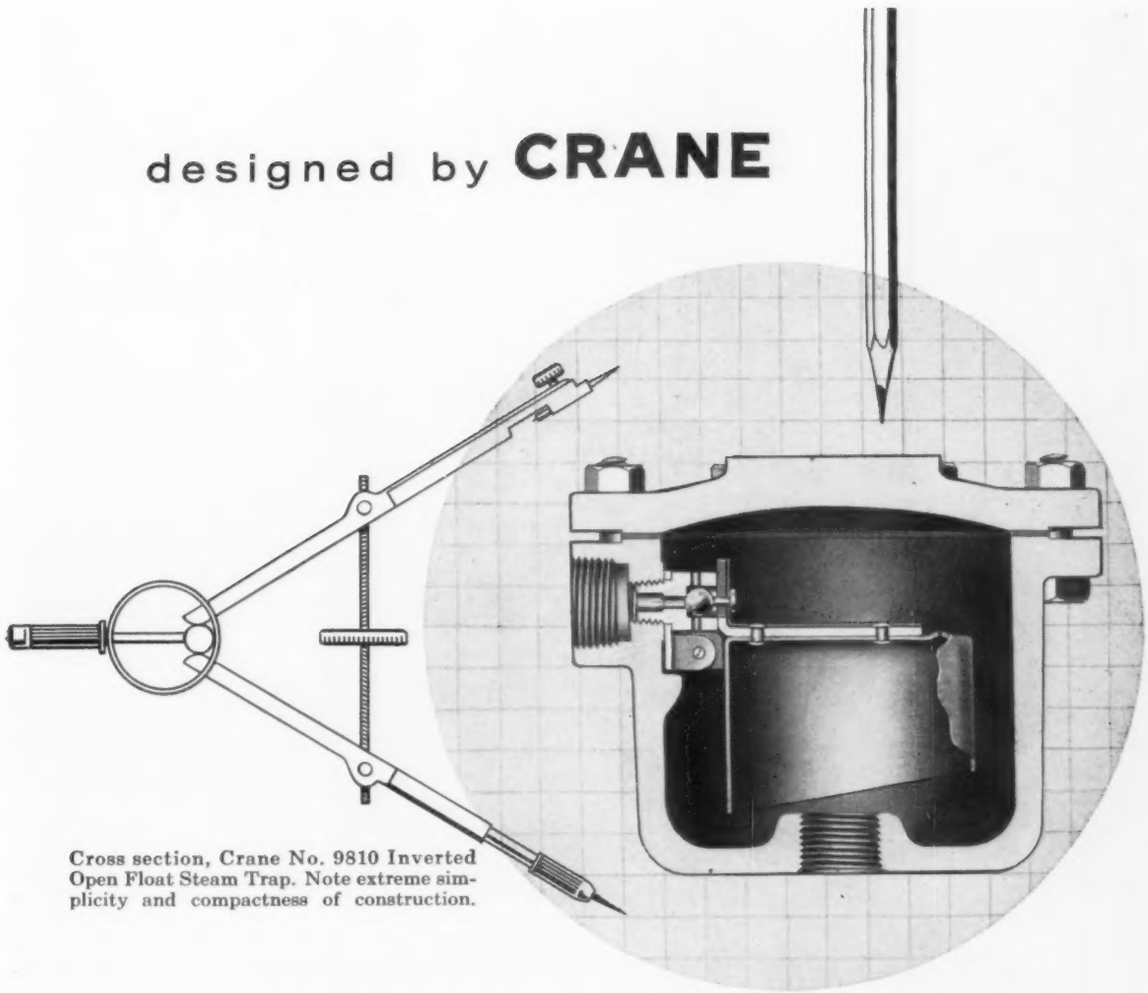
*Crown Zellerbach Corporation again selected*
*Emerson Claflins for primary refining at Antioch*

*This is the sixth* installation where*
*Crown Zellerbach has specified Emerson Claflins*
*for refining efficiency*

*The others are:
Camas, Washington
Elk Falls, British Columbia
Ocean Falls, British Columbia
Port Townsend, Washington
St. Helens, Oregon

LAWRENCE, MASSACHUSETTS, U.S.A.

# designed by CRANE



Cross section, Crane No. 9810 Inverted Open Float Steam Trap. Note extreme simplicity and compactness of construction.

## to keep your steam lines

## HOT, DRY and EFFICIENT

With an apparatus heated or operated by steam, you'll save fuel and insure operating efficiency by installing Crane Inverted Open Float Steam Traps—designed to drain condensate accumulation automatically and instantly.

The exceptionally rugged, simple construction of Crane Steam Traps provides high discharge capacities in relation to their size—permitting more compact installations. They are available in working pressures from 1 to 300 pounds saturated steam, sizes ½ to 1 inch.

For literature giving ordering and installation instructions, see your Crane Representative or write to address below.

**CRANE VALVES & FITTINGS**

**PIPE • KITCHENS • PLUMBING • HEATING**

*Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas*

# How to get the right finish for your papers

Whether you are concerned with beater additives, calender sizing or surface sizing, you can be sure of the right finish when you select a starch from Corn Products. Whether you put price, quality or versatility first, one of the many Corn Products starches will meet your exact requirements.

**BEATER SIZING**

Globe brand pearl starch, Claro brand starch and Amijel starches are outstanding in this application. Claro and Amijel starches are thick-boiling and pre-gelatinized. They are added to the beater in dry form. Globe starches are used extensively by mills that prefer to cook their starches, although they can be added dry as well.

**CALENDER SIZING**

Eagle, Hercules and Ten-O-Film starches give paper board an excellent surface for printing with gloss ink. They are miscible with any of the wax sizes and give the board a tough film and better slippage. Globe Gums are also widely used for calender sizing because of their uniformity, color and cleanliness.

**SURFACE SIZING**

Unusually high quality in color, clarity and uniformity make Hercules starches the choice in size press work. They are made in a series of viscosities in order to meet your exact requirements. Quality is guaranteed by complete automatic control of production. For those who prefer enzyme-converted starches, Globe brand corn starches offer uniformity, color and ease of conversion.

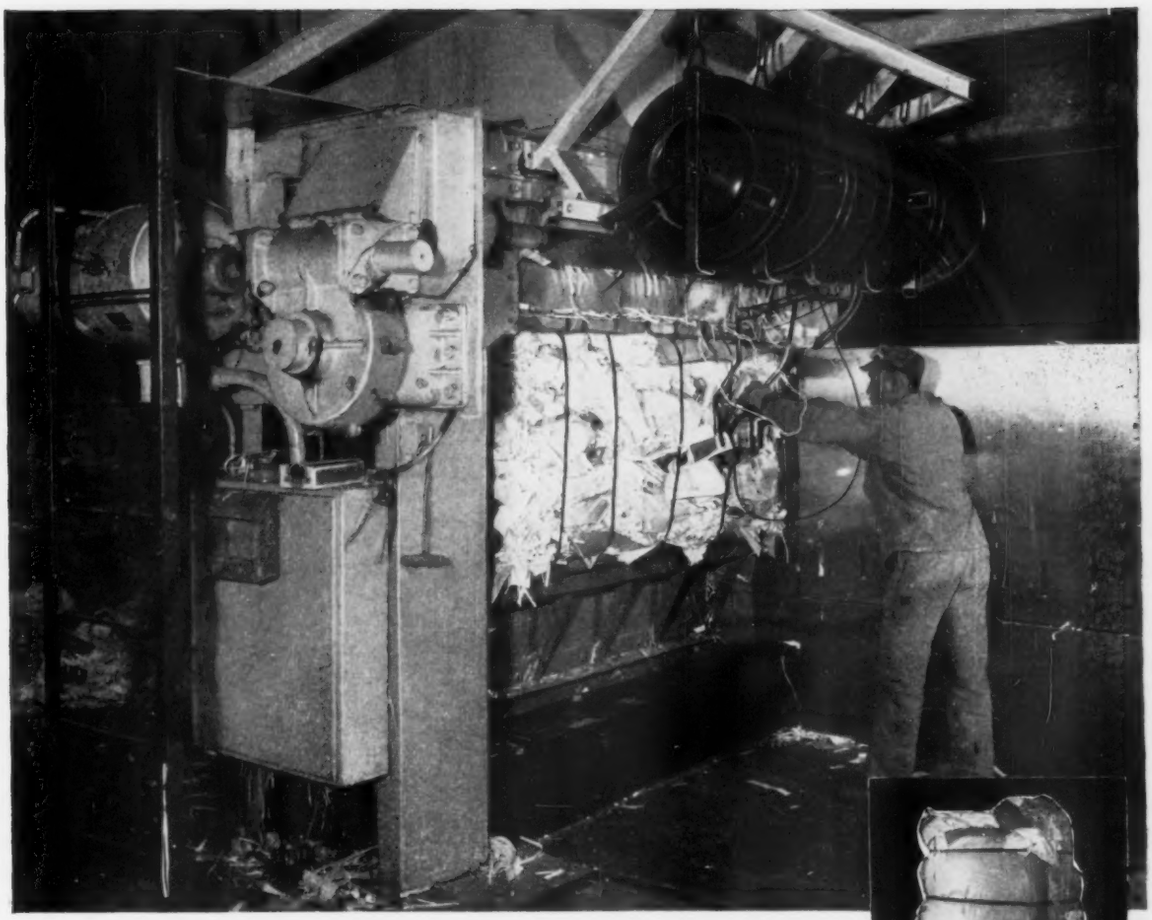
***ASK THE MAN FROM CORN PRODUCTS***

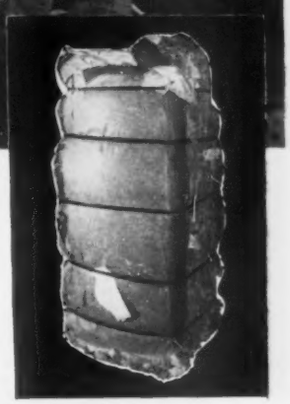
He can help with product information and engineering assistance. Whatever your paper-making problem, he will be able to supply you with the technical assistance you require. From the most complete line of starches in the paper industry, the man from Corn Products will recommend to you the right starch for the right job. Call our nearest field office or write to:

**CORN PRODUCTS SALES COMPANY**

17 Battery Place, New York 4, N. Y.

**Corn Products makes these famous brands of starches and gums for the paper industry:**
**HERCULES · GLOBE · EAGLE · FOXHEAD · AMIJEL · CORAGUM · TEN-O-FILM · CLARO STARCHES**
**EXCELLO AND GLOBE DEXTRINES · LAM-O-DEX GUMS**





# BALE WASTE PAPER?

**New Signode way is faster, easier, cheaper, safer**
**. . . uses your present baling press!**

*Faster* and *easier* because fewer ties are needed per bale; the inexpensive Signode setup eliminates waste motions of reaching, twisting, splicing; strapping feeds handily from conveniently located overhead dispensers.

*Cheaper* because bales are 29% denser, take 43% less strap per bale, save 25% of room in storage and in trucks; steel strapping stays tight, bales hold shape without bulging and wedging in transit; steel strapping itself can be unloaded from cars or trucks quickly and neatly with a lift truck.

*Safer* because flexible strap ends drop down, are easy to see; no sharp ends poke at man on receiving side; bales are squarer, firmer . . . safer and neater to handle, stack, load.

It's easy to change to this new method—now used by some of the biggest balers in the country. Signode fieldmen know how to adapt it to your present baling equipment . . . are ready to work with you now. If you bale waste paper or any other compressible material or product in any quantity, call the Signode man near you, or wire or write:

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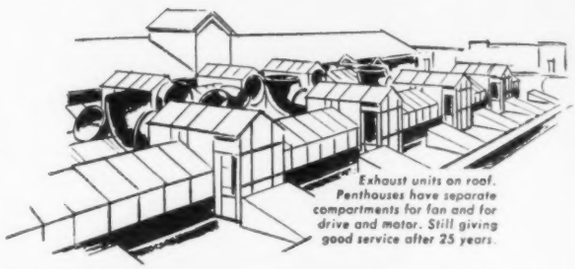
ROSS
Air Systems

SERVING THE PAPER INDUSTRY SINCE 1927

**ENGINEERING.....** CONSISTENTLY SOUND

**CONSTRUCTION...** CONSISTENTLY DURABLE

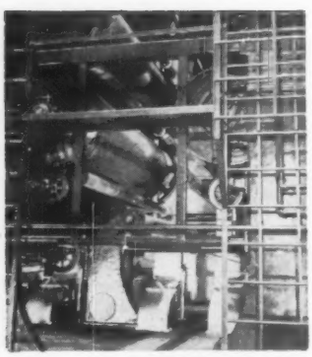


*Exhaust units on roof. Penthouses have separate compartments for fan and for drive and motor. Still giving good service after 25 years.*

In a very real and practical sense the words AIR and ROSS are synonymous. To these could well be added the phrase SKILLED ENGINEERING.

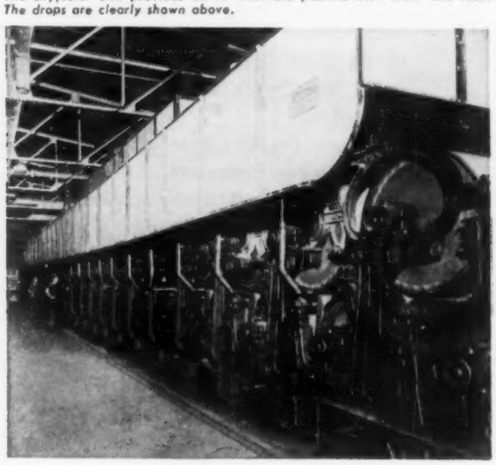
Since the early twenties Ross Engineers have been serving your industry in connection with the ever increasing use of air. They were among the first to demonstrate the importance of skilled engineering in the application of air to the production of pulp, paper and board. Four basic values have always been their targets: better end product, lower production costs, lower maintenance, and last but by no means least, better working conditions.

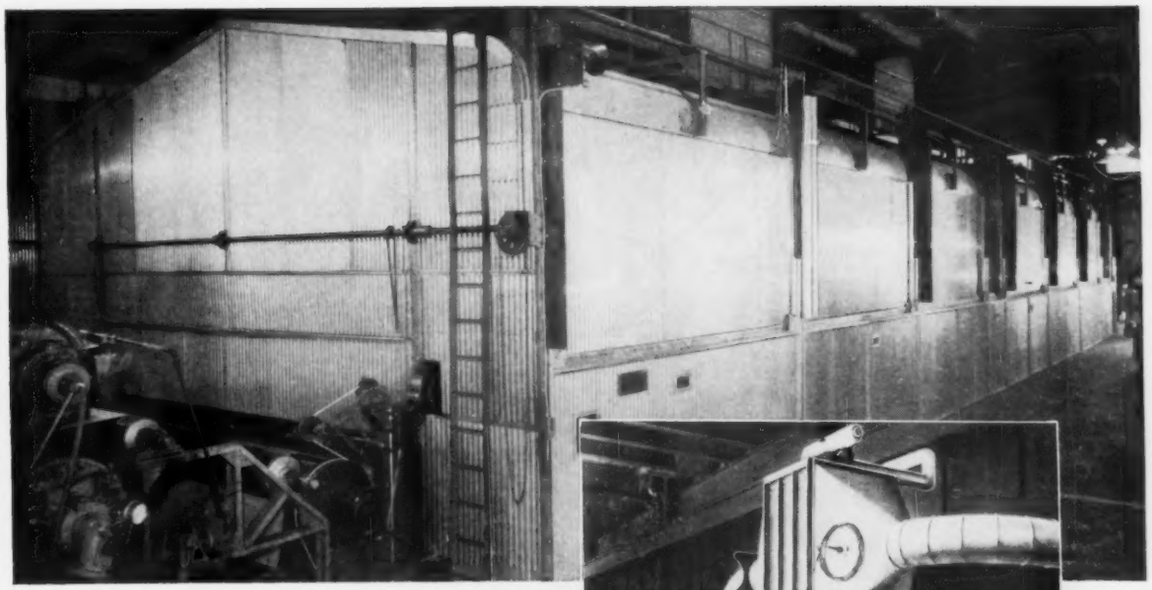
This calls for an understanding of the several important related variables and how to weld them into an efficient AIR SYSTEM. It calls for an understanding of temperatures, humidities, dew points, pressures, circulation,



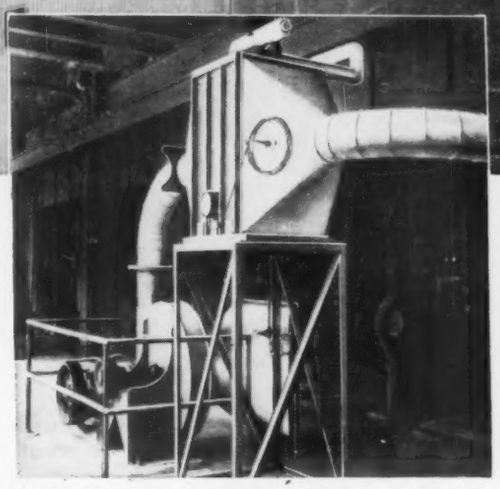
*Vapor absorption applied to stack dryers. Cross nozzles are equipped with nipples and hollow frames have converging stub nozzles.*

*The Dryjector unit provides air to alternate pockets both front and rear. The drops are clearly shown above.*





ROSS-HOOPER totally enclosed hood showing end and side panels. Side panels rise automatically in case of break.



Ross-Grewin apparatus takes up little space. Here shown are the filters, compressor and heaters at the rear side of the machine.

contact areas, heat removal and how to coordinate all these controlling factors.

Perhaps it is an appreciation of these skills and of the single overall responsibility of engineering, construction and installation that has.led to the great preponderance of ROSS Air Systems throughout the industry. Perhaps it is an appreciation, too, that it is risky business *not* to see to it that the best talent available takes charge of these problems.

During the past five years Ross Engineering Corporation and its Canadian Affiliate, Ross Engineering of Canada, Ltd., have designed, constructed and installed AIR SYSTEMS in many mills. The large recent installations include projects for:

**International Paper Co.**
**Bowaters Southern Paper Corp.**
**St. Regis Paper Co.**
**Powell River Co. Ltd.**

# J. O. ROSS ENGINEERING CORPORATION

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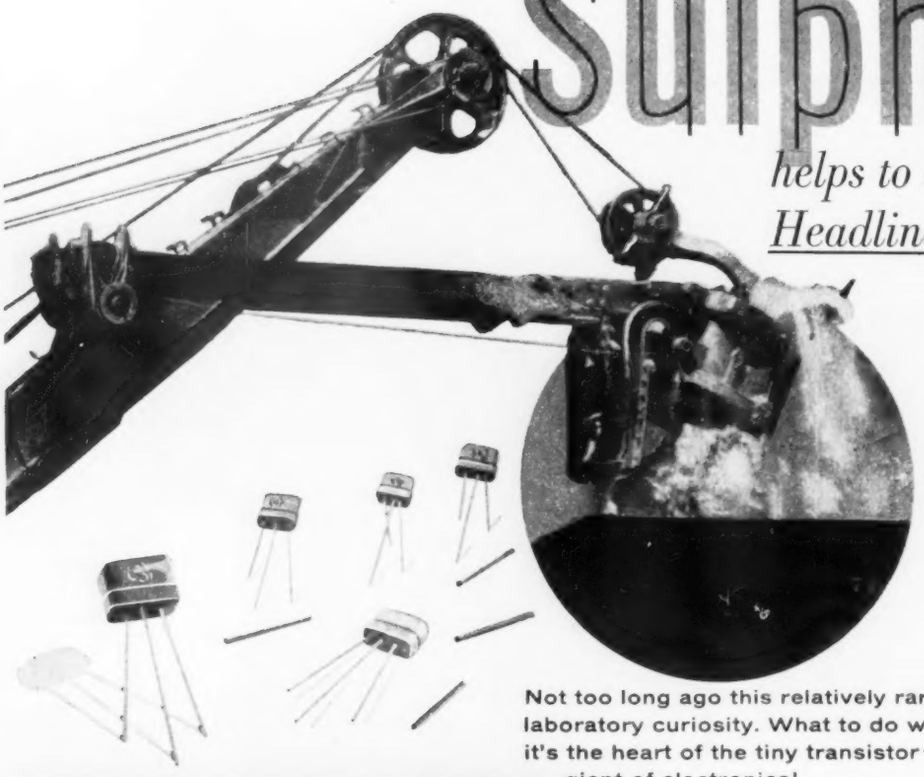
ANDREWS & GOODRICH DIV. Boston, Mass.

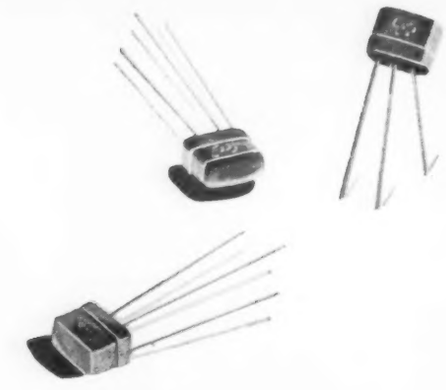
# Sulphur

*helps to create*
*Headline Products*



CHEMICAL PROGRESS WEEK-APRIL 8-12

## GERMANIUM



Not too long ago this relatively rare metal was a laboratory curiosity. What to do with it? Today, it's the heart of the tiny transistor—the latest giant of electronics!

What's the connection between Sulphur and Germanium?

There are two, in fact. One is man-made, involving the routine leaching of Germanium ores with Sulphuric Acid prior to tetrachloride distillation. The other takes advantage of a peculiar property of the natural mineral, Germanium Sulphide. This mineral can be volatilized and then sublimed, providing an effective method of separating the Germanium from gangue material. The process is called "Concentration of Germanium by Sulphide Sublimation".

Again Sulphur, through its major derivative, Sulphuric Acid, and a natural sulphide play an important role in our ever-expanding economy. It is difficult to find many items in the broad chemical-metallurgical field that do not somewhere along the production line make use of Sulphur or a derivative.

**Texas Gulf Sulphur Co.**

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Sulphur Producing Units
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- Spindletop, Texas
- Worland, Wyoming

# How to simplify control problems

## Keep systems flexible, carry small inventory, cut maintenance cost with the **Bailey Building Block Method** of instrumentation and control.

What is the Bailey Building Block Method? It's using standardized Bailey measuring, transmitting, and controlling components and combining them into any system you need. Components can be added as needed . . . removed and reused elsewhere . . . recombined into another system when the need changes. It's flexibility plus!

It's all based on the simple fact that a Bailey instrument or control component doesn't care if the measured variable is tank level, digester temperature, or paper room humidity, to pick just three of a mill full of examples. System components —transmitters, receivers, relays, selector stations, power units—are standardized for multi-purpose use.

A spare component can be used in any one of many systems. Gone are delays waiting for shipments of special parts. Gone are large inventories of spares and parts. Simplified is the training of men for maintenance.

There are many exclusive features and advantages of the individual components used in the Bailey Building Block Method. And there's much more to the Building Block story itself.

For further details, write to our Pulp & Paper Division. Our engineers will be glad to prove how the Building Block approach will save you money and simplify your instrument and control problems.

P39-1

BAILEY BUILDING BLOCK METHOD

**BAILEY METER COMPANY**

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In Canada—Bailey Meter Company Limited, Montreal

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BAILEY METERS

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# Spray Dried

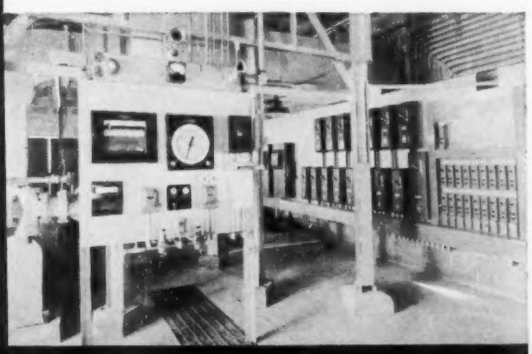
## Water-Washed COATING CLAYS

- Uniform Low Moisture Content
- Savings on Freight
- Improved Handling
- Easier Make-Down

*Thiele can help you make a better product.*

Extensive holdings assuring a dependable source of supply, plus modern plant facilities—and a new spray drying plant—make Thiele the logical first choice as suppliers of top quality clays.

Meeting the most rigid requirements, Thiele clays are unmatched for excellent color—high brightness—uniform low viscosity.



*Write for full information and a sample of Thiele Kaolin Coating or Filler Clay for your particular use.*

## *Thiele Kaolin Company*

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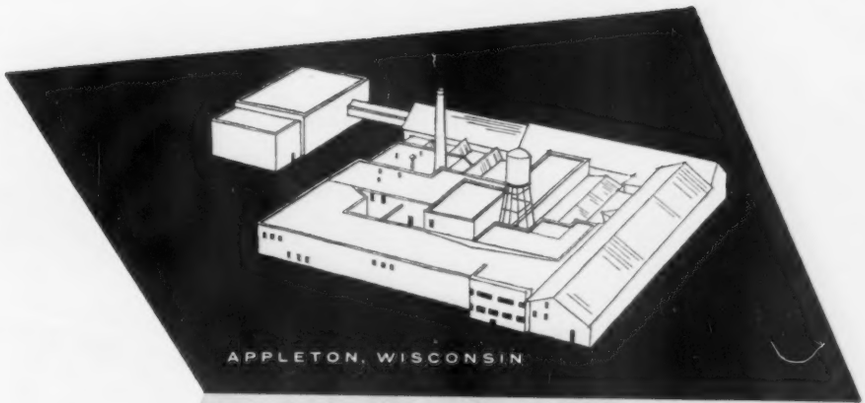

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**Confidence**....in the paper industry

**Foresight**.....to anticipate changing conditions and requirements of the paper industry with new manufacturing facilities

MONTGOMERY, ALABAMA
IN PRODUCTION SINCE OCTOBER, 1954

## Appleton Wires are Good Wires

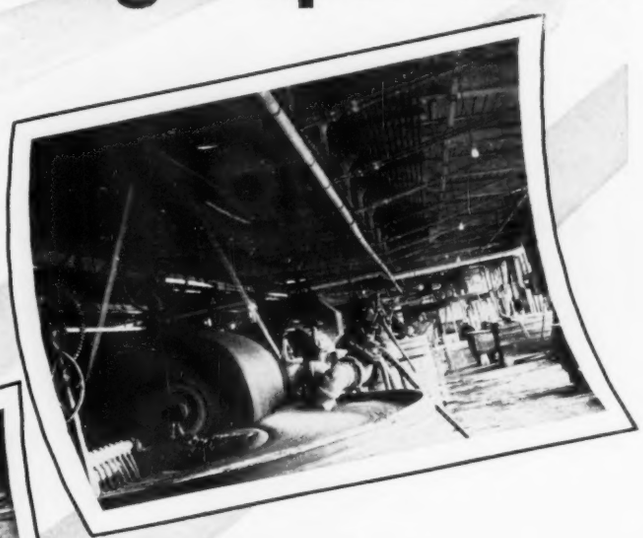
Appleton Wire Works, Inc.
GENERAL OFFICES, APPLETON, WISCONSIN

US RUBBER

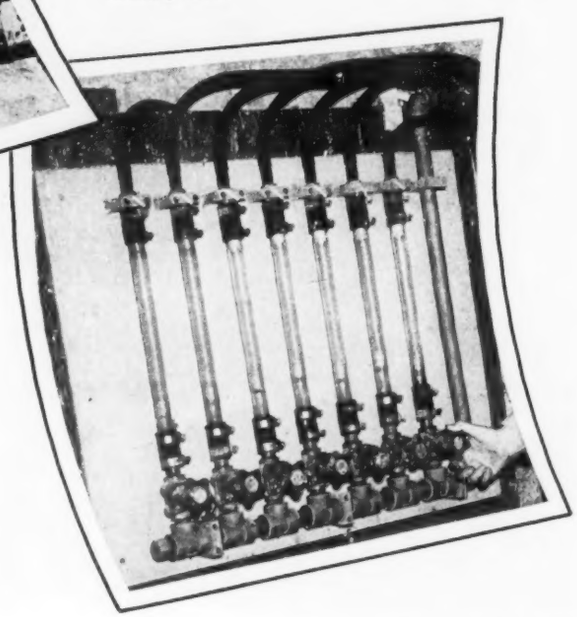
USCOLITE PLASTIC PIPE

# In the Kalamazoo River Valley —
# Leading Paper Mills

**"Uscolite Pipe is much easier to install,"** says the chief pipefitter of a large paper mill in the Kalamazoo Valley. And so far, its upkeep cost is nil because even after a year's service there's been no corrosion from chlorine bleach. Metal pipe lasted hardly six months. Adds the chief pipefitter, "We recommend Uscolite pipe to anyone with similar installations." Photo at right shows some of the 1500 feet of Uscolite used in the chlorine bleach lines of this mill.

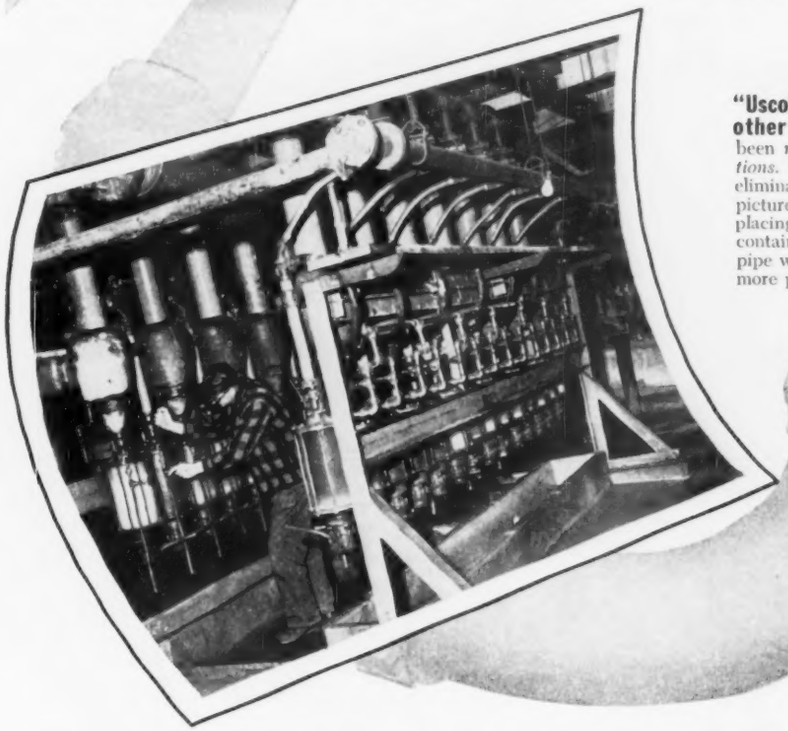


**"Uscolite shows no deterioration after 3 years,"** says executive of another large paper mill in the Kalamazoo Valley. The picture below shows Flowrator panel of Uscolite pipe which regulates flow of chlorine to paper vats to provide bacterial control. The Uscolite pipes are immune to corrosion, contamination, sweating, and are cleaner than the metal pipes formerly used.



**"No maintenance problems with Uscolite Pipe,"** says an official of the Allied Paper Corporation's mill in the Kalamazoo Valley. "We use Uscolite in our sediment removal system, chlorine bleach lines and glue system." Previous pipes usually lasted only several months, but Uscolite pipe has been on the job for 2 years so far and shows no sign of corrosion yet. Photo above shows Uscolite pipe fittings and valve of Sveen glue machine.

# choose Uscolite because



**"Uscolite costs far less to install than any other pipe,"** says a big mill, "and there has been *no failure in any of our Uscolite installations.* That means all our repair time has been eliminated." Centrifugal separator barrels (in left picture) are made of Uscolite 6-inch pipe, replacing brass pipe which eroded badly from dirt contained in the swirling water. Stainless steel pipe was rejected because it cost nearly 6 times more per foot than Uscolite pipe!

**Which USCOLITE pipe best serves your needs?**

**Uscolite CP:** styrene-acrylonitrile-butadiene copolymer; good resistance to strong acids, active chemicals; higher impact strength and operating temperatures.

**Uscolite RV:** an unplasticized, unmodified polyvinyl chloride (PVC); higher resistance to strong oxidizing acids and chemicals; good impact strength.

First used in the Kalamazoo Valley three years ago, Uscolite® plastic pipe has been so successful in carrying chemical solutions, *without being harmed by corrosion and erosion,* that more than a dozen paper mills in the Valley now use Uscolite pipe and *replace metal pipe* with Uscolite as soon as the metal pipe wears out. Uscolite pipe and fittings—including elbows, tees, flanges, couplings, valves—are obtainable at any of our 28 District Sales Offices each staffed with factory-trained engineers, at selected "U.S." distributors, or write us at Rockefeller Center, New York 20, N. Y.
In Canada, Dominion Rubber Co., Ltd.

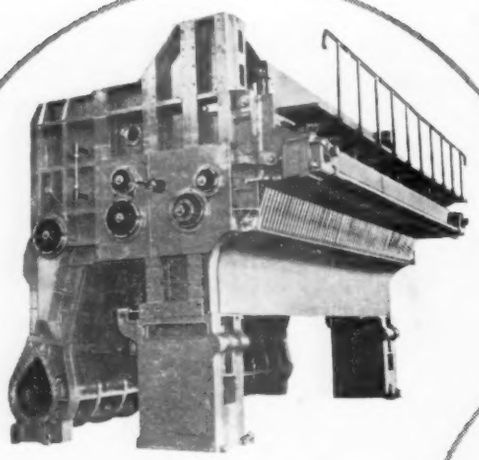
US RUBBER

**Mechanical Goods Division**

# United States Rubber

# "DOMINION"

**contributes to progressive improvements in Canadian paper making machinery**



Dominion patented head box for Elk Falls 284" newsprint machine.

Head box for Spruce Falls 234" newsprint machine.

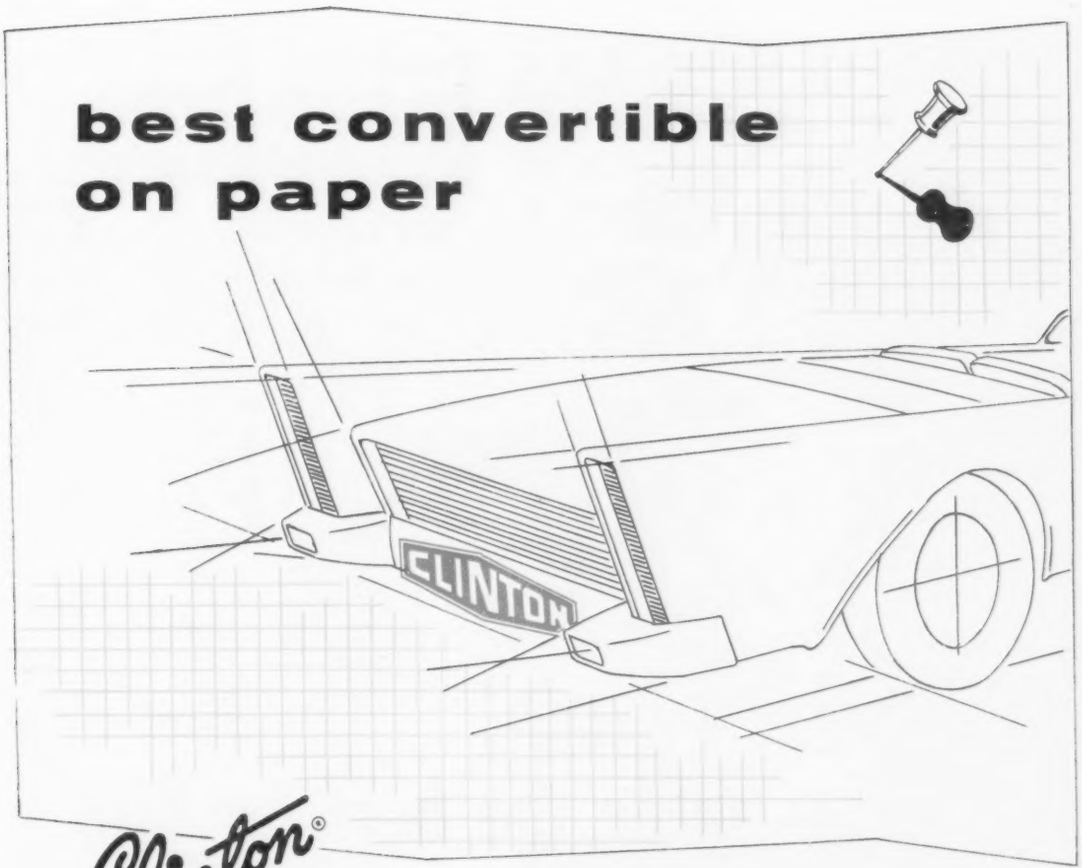
A head box for Howard Smith Paper Mills Crabtree Mill 96" Yankee Tissue Machine.

**Three of the many new pressure type head boxes built and being built by Dominion Engineering— ensure controlled, uniform flow for paper machines regardless of stock, width or speed...**

*For further information, contact Dominion Engineering Company Limited, in Montreal, Toronto or Vancouver*

**DOMINION ENGINEERING**
COMPANY LIMITED

# best convertible on paper




## Clinton® enzyme conversion starch

Clinton's "convertible" starches, 3011 and 3021, convert uniformly to give you desired penetration . . . increased strength . . . better printing surface. And, since 3011 and 3021 convert well at high solids levels, they give efficient coating . . . from application to drying.

No wonder so many leading papermakers use Clinton enzyme conversion starches. They convert prospects to customers!

*. . . and remember* technical service in connection with your specific problems is available without obligation.

**Quality products**

FROM THE WORLD'S CORN CENTER

CLINTON

CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

*Our 50th Anniversary Year 1907-1957*

# *Making the best defoamer is not enough...*

# *It has to be the best for YOU*

Every paper mill must control foam—with the greatest possible efficiency—at the lowest possible cost. And since each mill differs so widely from every other mill, Nopco's Paper Division spares no effort to make certain we have a defoamer—whether paste, liquid, or flake—that will effectively, economically control foam in *your* mill.

But making the best defoamers is not enough. Nopco's technical staff has the breadth of experience that can be invaluable to you in fitting the right defoamer to your special needs. These men will work with you in your own mill, examine samples of white water from your mill in our laboratories, or do both.

You can't be sure you've attained *maximum defoaming efficiency at the lowest cost per ton* until you have the best "team" in the business, the Nopco technicians, prescribe from the widest range of defoamers in the business—the Nopco defoamers. Write today for a free booklet on Nopco defoamers. Nopco Chemical Company, Harrison, New Jersey.

NOPCO

PLANTS: Harrison, N. J.
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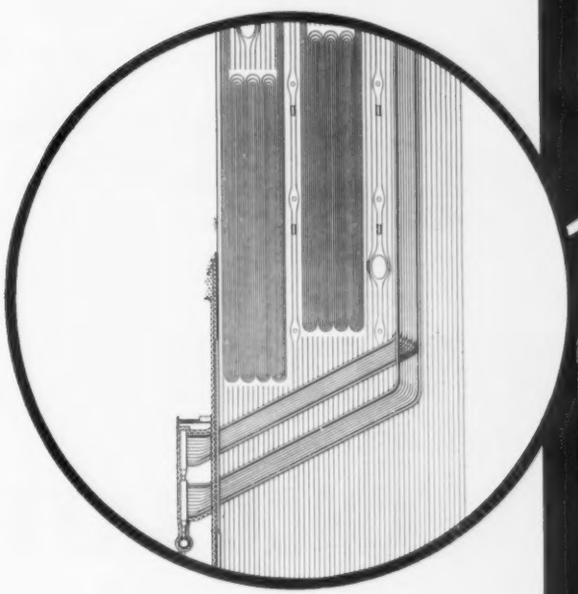
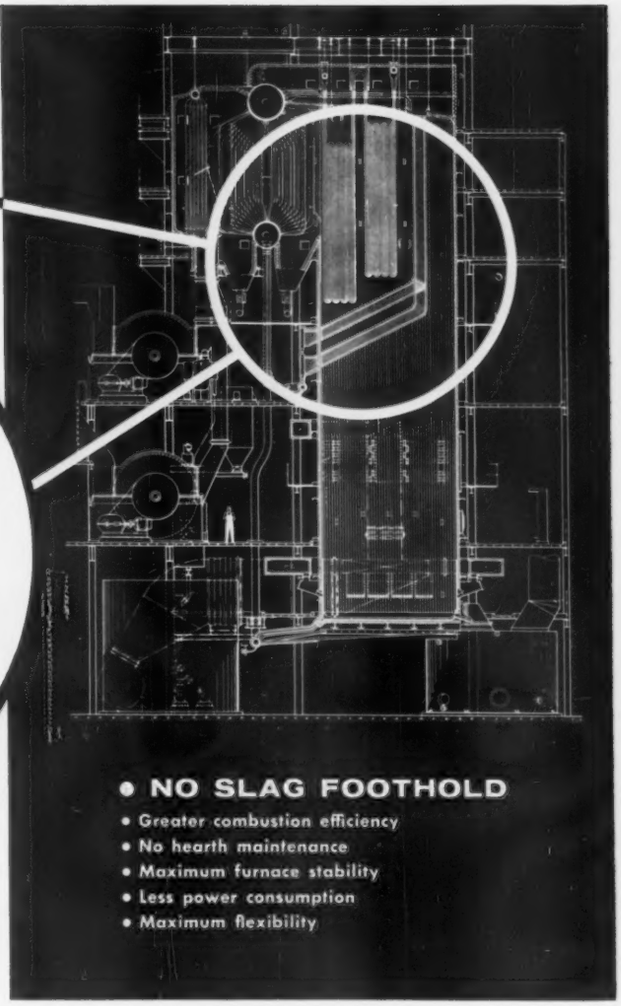
# NO SLAG FOOTHOLD HERE



As shown here, the superheater of the C-E Recovery Unit is located above the furnace. Thus chemical ash deposits fall directly to the furnace hearth. The panel type slag screen is also illustrated.




Slag accumulation on the superheater tubes of a chemical recovery unit means trouble. With a conventional type superheater, slag builds up and anchors itself around individual tubes, reduces heat transfer rates, blocks gas passage, increases draft loss and necessitates frequent mechanical and manual cleaning.

The self-cleaning panel type superheater, found only on the C-E Recovery Unit, allows slag no such foothold. Each element—or panel—of the superheater consists of a solid wall of tangent tubes with wide spacing between panels. The space between individual tubes has been eliminated. There are no spacers. Slag deposits are confined to the wall-like surface of the elements where a considerable amount of it frees itself and the rest is easily dislodged.

As the drawing illustrates, the screen in front of the superheater also uses the same principle of panel construction. As a consequence, gas passage through both the screen and the superheater is smooth and unimpeded. Slag build up is minimized, surfaces are cleaner, gas flow and heat absorption is uniform across the width of the furnace and soot blower action is much more effective.

Developed by, and exclusive with C-E, the panel type superheater and screen represents another significant achievement which has resulted from Combustion's continuing efforts to "make good equipment better."

B-979

## COMBUSTION ENGINEERING

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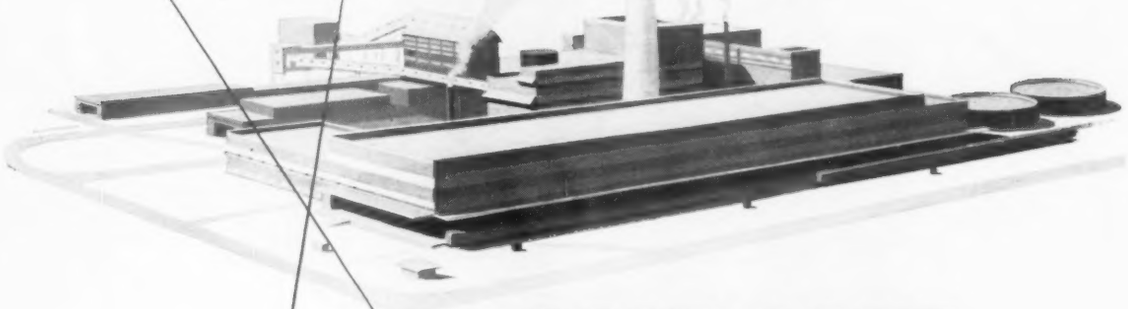
ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE

**TRONA®** *serves the Pulp Industry with*

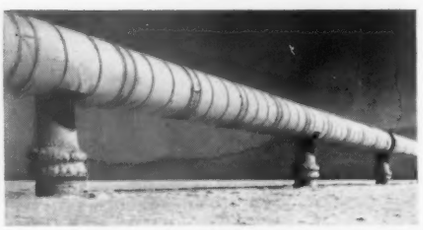
**2 QUALITY PRODUCTS**

*from* **2 DEPENDABLE SOURCES**

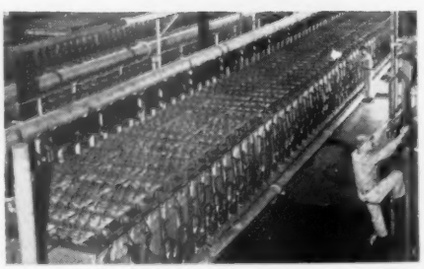


# SALT CAKE
OF HIGHEST PURITY
# SODIUM CHLORATE
FOR CHLORINE DIOXIDE BLEACH

**SEARLES LAKE**
**at Trona, California.**
Source of *natural* sodium sulphate, essential for quality kraft production



**HENDERSON, NEVADA.**
Source of $NaClO_3$ for the *SOLVAY* high-stage chlorine dioxide pulp bleaching process.



Add another step forward in American Potash & Chemical Corporation's continuing diversification program! Trona has long been the leading source of *natural* sodium sulphate ($Na_2SO_4$) from the brines of Searles Lake, so essential in quality kraft production. Now from American Potash & Chemical Corporation (Nevada) (formerly Western Electrochemical Company) Trona serves the industry with highest purity sodium chlorate, used extensively in the SOLVAY high-stage chlorine dioxide pulp bleaching process. Two dependable sources, two quality products—a combination that can't be beat!

**American Potash & Chemical Corporation**

TRONA

Los Angeles New York Atlanta San Francisco Portland (Ore.)

*Producers of:* Borax • Potash • Soda Ash • Salt Cake • Lithium Bromine • Chlorates • Perchlorates • Manganese Dioxide • *and a diversified line of specialized agricultural and refrigerant chemicals*

*Plants:* TRONA and LOS ANGELES, CALIFORNIA
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SAN ANTONIO, TEXAS (American Lithium Chemicals, Inc.)

# IMMEDIATE DELIVERY...

## ESCO IPS SCREWED FITTINGS

## CAST STAINLESS STEEL

### 150 LB. STANDARD

*ESCO* cast stainless fittings are a vital part of every corrosion resistant piping system. Cast with heavy wall sections and in a variety of analyses, *ESCO* screwed fittings are carried in warehouse stocks in sizes ranging from ⅛" to 4". Complete size range is available in 90 and 45 degree elbows, tees, crosses, unions, couplings, reducers, plugs, bushings and locknuts. Permanent alloy identification is cast in each fitting to eliminate replacement error.

Special sizes, types and alloys can be made to engineering specifications.

*ESCO* cast stainless fittings are available from convenient warehouse stocks. See your nearest *ESCO* dealer. He can help you solve your corrosion problems. Ask for *ESCO* Catalog No. 156 giving complete dimensional data.

ESCO

**ELECTRIC STEEL FOUNDRY COMPANY**

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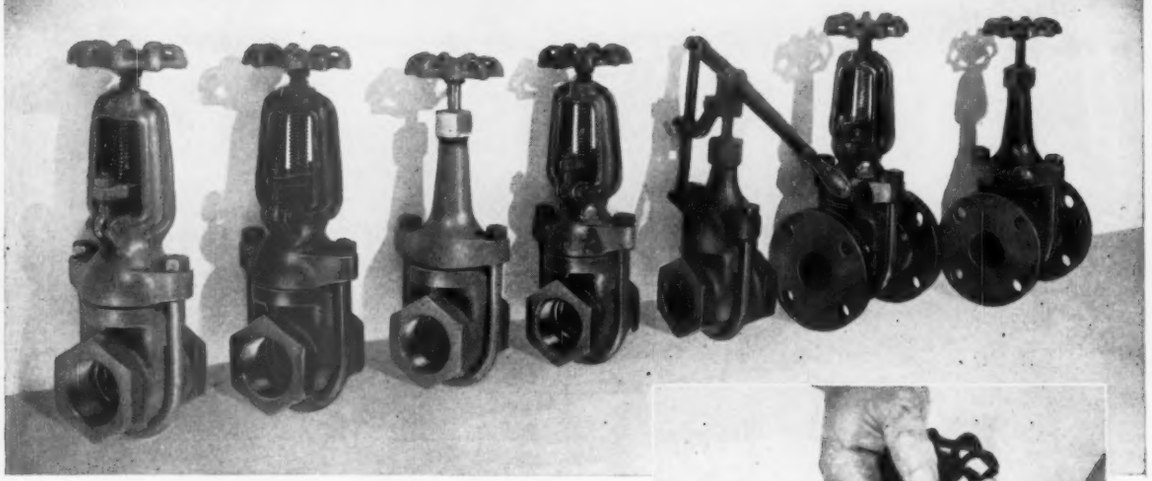
MFG. PLANTS AT PORTLAND, ORE. AND DANVILLE, ILL.
Offices in Most Principal Cities
ESCO INTERNATIONAL, NEW YORK, N. Y.
IN CANADA ESCO LIMITED

# Eleven lines of WALWORTH Saddle Type Wedge Gate Valves

**Bronze-Mounted — All-Iron — Ni-Resist**

**Outside Screw and Yoke — Non-Rising Stem — Quick Opening**

**Flanged Ends — Screwed Ends**



Walworth saddle-type wedge gate valves are manufactured in eleven different combinations of designs and materials, seven of which are illustrated above.

Saddle type wedge gate valves are easy to take apart and are particularly suitable for lines requiring frequent cleaning. Walworth Saddle-Type Wedge Gate Valves are available in a variety of designs including OS & Y; Inside Screw Rising Stem, and Sliding Stem Quick Opening types—in Bronze-Mounted, All-Iron, and Ni-Resist. All types are designed to permit repacking under pressure in either the open or closed position.

**FOR COMPLETE INFORMATION, See your local Walworth Distributor or write on business stationery for illustrated circular.**

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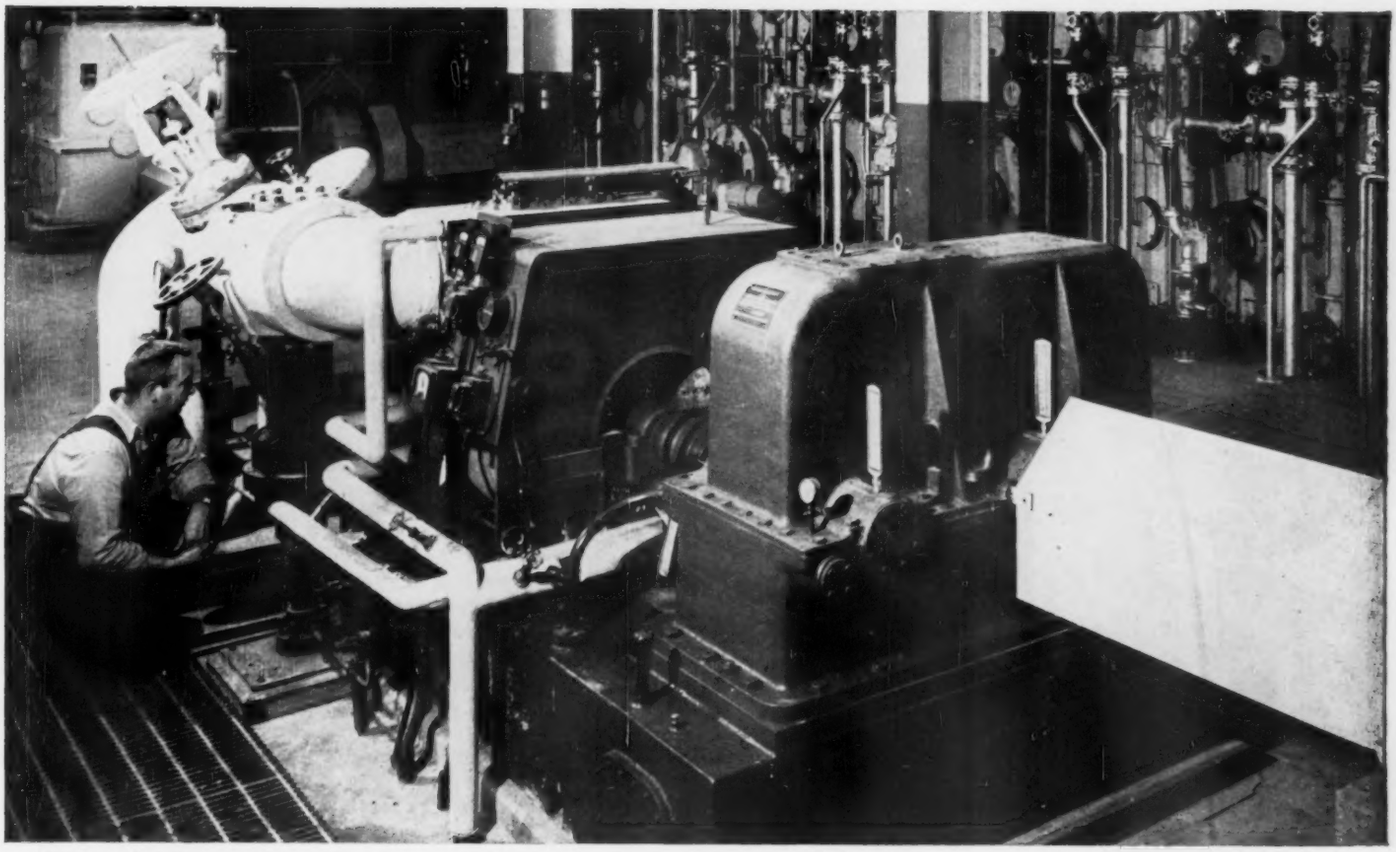
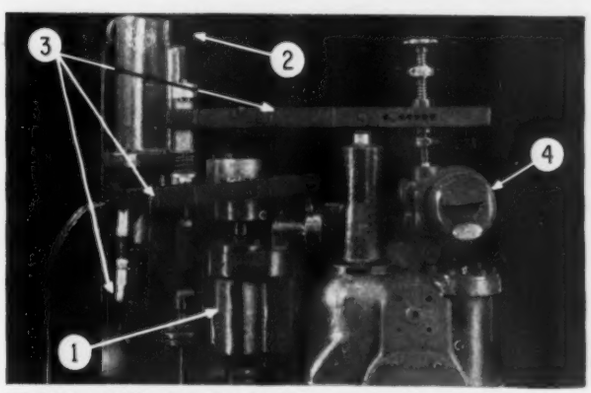


New General Electric governing system is integral part of this paper machine turbine drive installed at the Crown Zellerbach Kraft Paper Mill, Antioch, California.

# New General Electric governing system provides closer speed control for paper machine turbine drives




**NEW GOVERNOR OFFERS FINER ADJUSTMENT, FASTER SPEED RESPONSE**

1. Smaller primary piston doubles relay speed to meet rapid changes in load requirements.
2. Powerful secondary operating piston accurately positions steam control valves.
3. Simplified linkage system, utilizing rigid, weight-biased joints, speeds control response, needs little maintenance.
4. Two-speed motor gives finer speed adjustment, faster speed change.

The new General Electric governor is now guaranteed to maintain line shaft speed within $\pm 1/10$ of one per cent of rated speed—$2\frac{1}{2}$ times closer turbine speed control than previously offered.

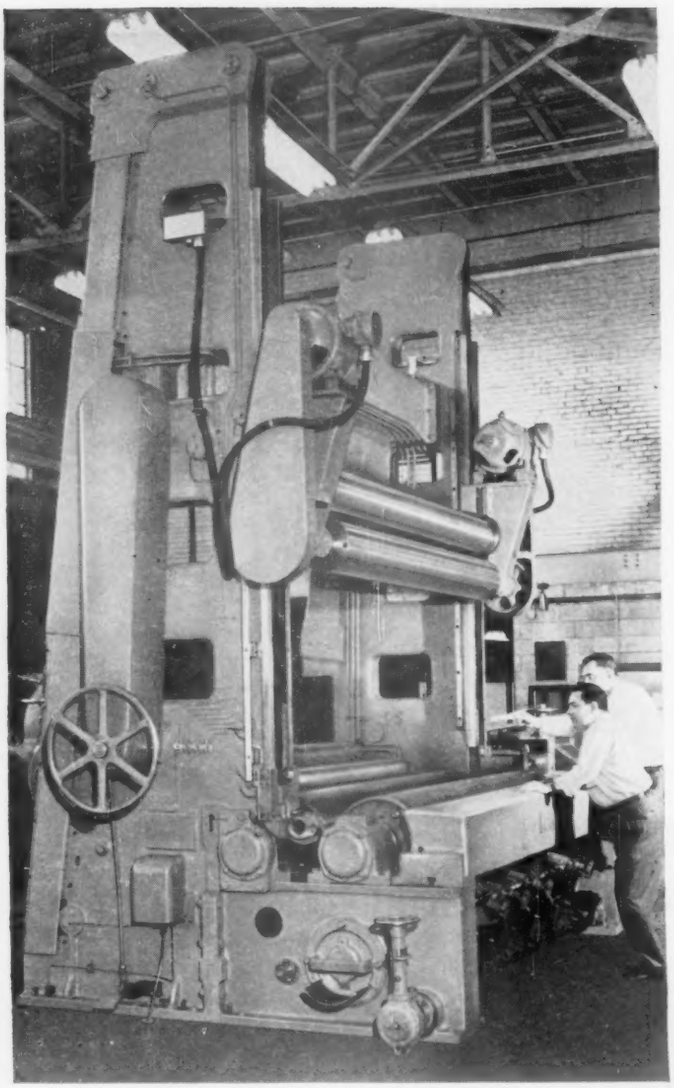
**COMPLETE UNIT RESPONSIBILITY** for service is also provided during planned maintenance checkups since this governing system is unit-engineered as an integral part of General Electric turbine drives.

For further information on General Electric high-speed turbines and the benefits of this new governing system for paper machine turbine drives, contact your nearest Apparatus Sales Office, or write for bulletin GEA-6232, General Electric Company, Section 241-8, Schenectady, New York.*

*In Canada, contact Canadian General Electric, 107 Park St., Peterborough, Ont.

*Progress Is Our Most Important Product*

GENERAL ELECTRIC



# Standard design **Langston Slitters & Winders** adapt easily for special application

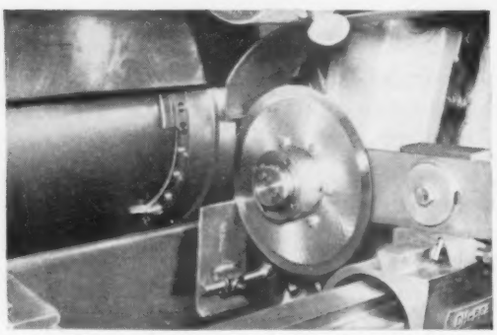
Here's a Langston Slitter & Winder recently installed at the St. Regis Paper Co. mill at Pensacola, Fla., to wind extremely heavy board. The maximum trim is only 92 in., but the weight of the board and the diameter of the rewound roll demanded a machine of unusual stamina.

The machine indicated was the Langston Model DH with certain special features: 18-in. diameter drums and idlers that guard against checking of the heavy board, hydraulic roll ejector, automatically controlled air brakes on main drums and idler rolls.

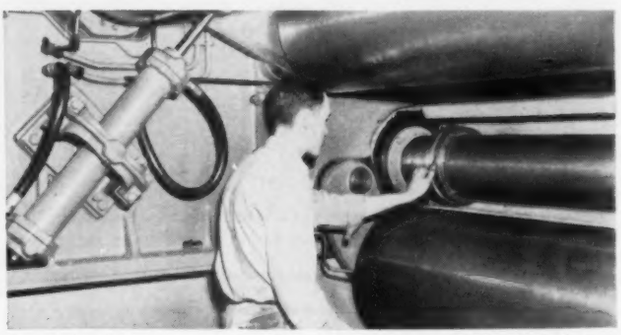
Density of the roll can be held constant all the way from the beginning of the wind, largely as a result of a newly designed hydraulic control of the pressure roll. Starting at a preset value, rider roll pressure is gradually reduced as the rewound roll builds up in diameter, thus automatically compensating for its increased weight.

Roll density is further controlled by independent, variable-speed motors at each end of the rider roll. D-c ammeters and tachometers indicate rider roll tensioning effort.

Langston Slitters & Winders are available in sizes to 196 in. wide and 72 in. dia. Speeds to 4000 fpm and beyond. Write SAMUEL M. LANGSTON CO., Camden 4, N.J.



**Shear-cut slitter.** Rear slitter is power driven and rotates front slitter by friction. Paper passes between and is actually sheared by the action of the two knives. This means cleaner edges, cleaner paper rolls, cleaner plant.



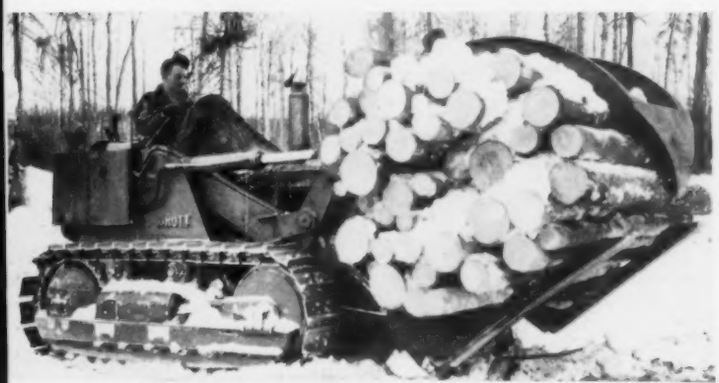
**Setting the slitters.** Operator has free access to power-driven slitter knives from either rear or front of machine. Here he measures trim slitter for position. Notice also the 18-in. idler roll beneath his hand and the ejector roll hydraulic mechanism over his left shoulder.

**LANGSTON** *Leadership...by design*

SHEAR CUT CLEAN CUT

# How Skid-Grapple gives you production-line woods efficiency!

The International TD-9 pulpwood Skid-Grapple loads up to one cord of 8-foot pulpwood per pass—240 cords, or more, daily with only a one-man "crew"!



**Using semi-skid transport** on big, heavy-duty Skid-Shoes lets you transport full grapple-loads with exceptional ease and speed. Impact forces of rough-ground travel are gentled 67%, or more, by exclusive, shock-swallowing Hydro-Spring!

**You pile high** into trucks or onto piles—use selective dumping control, to release logs one by one, or all at once. Top grab-arm is controlled by third valve of hydraulic system—which can also be used to control rear-mounted road-working equipment.

Get into an International crawler's rubber-padded seat, press the starter button, and you're on your way to greater pulpwood profits! Turn on the power and *simply push* the lower arms of the International Drott Skid-Grapple into the woodpile. As soon as a grapple-load is in grabbing position, use fingertip control to clamp onto the wood securely with the *exclusive* top grab-arm.

Then apply *exclusive* triple-power pry-over-shoe break-out action—and you wrench loose even frozen-down or mudded-in pulpwood, without any peavey-prying or other handwork, whatsoever!

Use famous International Drott-developed ground level rollback to bring the load close to the tractor, improve balance, provide "see-all" visibility, make transport easier.

With an International Drott Skid-Grapple you have the *traction* and *break-out action* to load big cordage anywhere, in any weather. *And from the time cutters stack your pulpwood on strip-road or at the stump, you don't touch it by hand!*

*Prove you can save $1.00 or more* in labor costs per cord with a Skid-Grapple and get production-line efficiency. See how you get a multiple-duty road-builder—by switching a Skid-Grapple with a Four-In-One, or Skid-Shovel bucket or Bull-angledozer blade. *Compare* exclusive shock-swallowing Hydro-Spring advantages. See your International Drott distributor for a Skid-Grapple demonstration.

International Harvester Company, Chicago 1, Illinois
Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL® DROTT®

# *Chip Rite* *with...*

## SUMNER WOODROOM MACHINERY

**THERE IS A SUMNER CHIPPER FOR EVERY MILL REQUIREMENT!**

**WHOLE LOG CHIPPERS**
**PULPWOOD CHIPPERS**
**WASTEWOOD CHIPPERS**
**MULTI-PURPOSE CHIPPERS**
**PEELER CORE CHIPPERS**
**VENEER CHIPPERS**
**RECHIPPERS**

Complete Self-Contained Units
Portable or Stationary

Sumner Horizontal Feed Wastewood Chipper with Overhead Discharge

### ✓ FEED

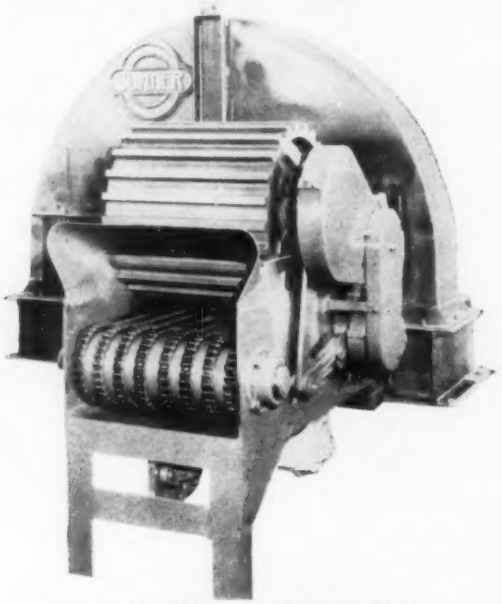
GRAVITY FEED
HORIZONTAL FEED
CONTROLLED FEED

### ✓ DISCHARGE

BOTTOM DISCHARGE
OVERHEAD DISCHARGE

### ✓ SPOUT

RECTANGULAR SPOUT
SQUARE SPOUT
"V" SPOUT
ROUND SPOUT
HUMPED SPOUT



Sumner Vertical-Cut Veneer Chipper, Horizontal Feed, Bottom Discharge

The size of chipper, method of feed, number of knives, type of chip discharge . . . all dependent upon individual mill requirements.

SUMNER has the distinction of building the largest and the smallest, as well as the widest range of chippers, including all accessories . . . regardless of size or service required.

### ✓ BARKERS – CHIPPERS – SCREENS

Wood Handling and Log Breakdown Machinery

A Single Unit or a Complete Woodroom Assembly

Every inquiry receives our immediate attention.

**SUMNER IRON WORKS**
Since 1892
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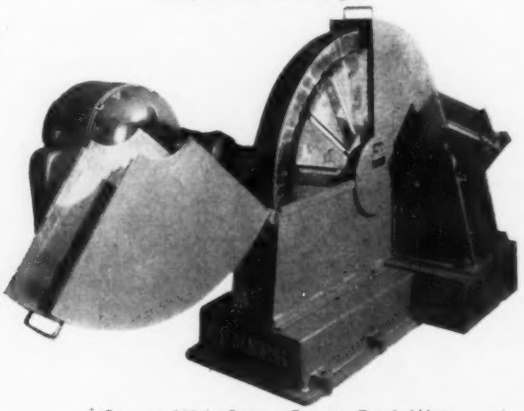
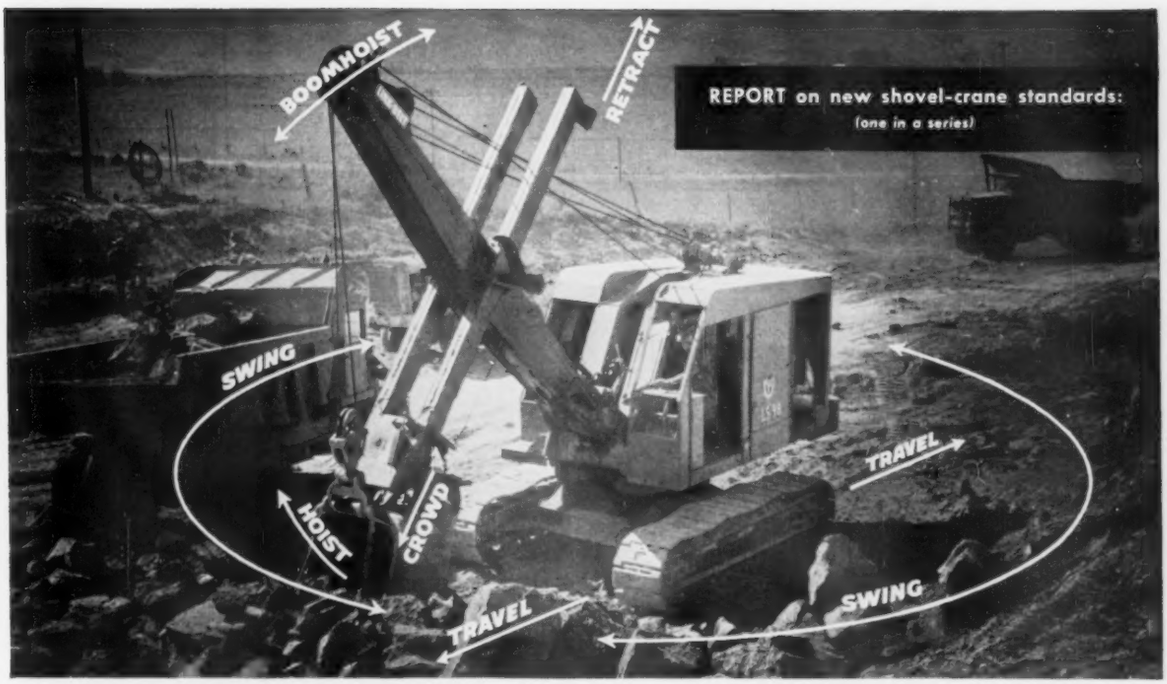


Sumner Wide Spout, Gravity Feed, Wastewood Chipper




**ALL OPERATIONS ARE COMPLETELY INDEPENDENT** — In addition to eliminating shifting time, *Independent-Travel* allows the operator to swing and hoist the load while travelling. Whether to save time or to jockey the boom around obstacles, the operator can swing the boom while his machine is travelling in either direction. This optional feature can be used with any front-end attachment.

# Getting 9 hours' output in 8

## Independent-Swing-and-Travel is available on 11 Link-Belt Speeder models. Eliminates shifting . . . saves 20-30 seconds each move

Link-Belt Speeder users are setting new high-production standards by equipping their machines with *Independent-Swing-and-Travel*. Why? It eliminates time losses ordinarily occurring when the operator shifts from swing to travel and from travel to swing. With *Independent-Travel* shifts are eliminated and the machine can swing and travel simultaneously . . . you can jockey the boom around obstacles in tight quarters, move away from bank cave-ins in split seconds!

If you'd like complete details, proof that *Independent-Travel* can up output . . . cut maintenance and spare parts costs, too — see your Link-Belt Speeder distributor or write Link-Belt Speeder Corporation, Cedar Rapids, Iowa.

**MORE USABLE HORSEPOWER** — Size for size, Link-Belt Speeder shovel-cranes utilize more of the engines' available horsepower. This bonus pays off in added power at the bucket teeth, greater line pull plus extra power to swing, hoist and travel. Although it gets more usable power and line pull out of the same engines used in other shovel-cranes, a Link-Belt Speeder remains well within the engine manufacturers' recommended operating speeds.

14,324

*It's time to compare . . . with*

# LINK-BELT SPEEDER

*Builders of a complete line of shovel-cranes . . . with exclusive Speed-o-Matic power hydraulic controls*

# How to "SPANK" pulpwood costs "into line"

This large pulpwood concentration yard has the answer—a 15-ton Lorain Self-Propelled Crane, Model SP-254. Here, it is shown performing two of its many daily tasks. In the top photo, it uses a concrete bumper to "spank" logs into line on rack cars, headed for mill.

These rubber-tire, self-propelled Lorains are highly mobile and maneuverable, they can go anywhere—are equipped with independent travel for simultaneous hoist, swing and travel for maximum agility—can use grab or grapple, sling or rake—to handle wood of any size, in any stored or stacked condition. More than a score of rubber-tire Lorains are available for pulpwood handling—from 7 to 75 tons on rubber-tires—from 8 to 60 tons on crawlers. Let your Thew-Lorain Distributor show you how to mechanize—and economize—with a Lorain.

*The same Lorain—at the same yard—this time equipped with a double bridle sling, loading pulpwood from woods trucks to rack cars headed for the mill. Note how the gooseneck boom gives added and desirable load clearances.*

THEW **LORAIN**®

**The Thew Shovel Co. Lorain, Ohio**

# *Fastest Cutting Speed*

## of any direct drive CHAIN SAW

HOMELITE EZ

**5 Horsepower**
**19 Pounds**
**New Low Cost**

**Zips through**
**8″ Oak in**
**5 Seconds**
**18″ Pine in**
**14 Seconds**

*Try* the new Homelite *EZ* and you'll see why it gives you the fastest cutting speed of *any* direct drive chain saw . . . and why it lets you cut more wood with less effort and less fatigue.

Its full 5 horsepower zips through 8″ Oak in 5 seconds, 18″ Pine in 14 seconds . . . brings down trees up to 3 feet in diameter. All-position, all-angle carburetor gives you full power for *any* cut . . . up, down, right, left, even upside down.

Because it weighs only 19 pounds you can take it *anywhere!* You can limb and undercut faster . . . fell, buck and notch *easier!*

Try it and see! Get a free demonstration at your nearest Homelite dealer's . . . and learn how easy it is to buy on a convenient time payment plan.

*Homelite builds and sells more chain saws than any other company in the world.*

# HOMELITE

A DIVISION OF TEXTRON INC.

**7703 RIVERDALE AVENUE, PORT CHESTER, NEW YORK**

Manufacturers of Carryable Pumps • Generators • Blowers • Chain Saws

**A COMPLETE LINE OF CHAIN SAWS FOR EVERY CUTTING NEED**

# The trend is to rubber tires...*and FORD!*

**More and more pulpwood loggers are using rubber-tired tractors—and the low-cost Ford Tractor is, by far, the favorite! There are sound reasons for this equipment trend, and for the overwhelming preference for Ford. Here are some of the most important:**

1. **Fords give you exceptional mobility in the woods. They're easier to maneuver in thick growth... have a short turning-radius... eliminate the need for a truck and trailer on moves.**
2. **Fords are easy to operate. Automotive steering and vertical-type gear shift make Ford Tractors as easy to operate as your car. No need for extensive operator training.**
3. **Fords cost less to own and operate. You can buy a Ford Tractor for less than the cost of one laborer's annual wages. And, you keep right on saving on fuel and maintenance every day you own it.**
4. **Fords give you extra lugging power for skidding. With Ford's "Red Tiger" engine, power stays up when speed slows down.**

**Get the complete story on Ford Tractor workability in the woods... on the prompt service you can expect from your nearby Ford Tractor dealer. Call your dealer, or write to: Tractor and Implement Division, Ford Motor Company, Birmingham, Michigan.**

**Add this single-drum rear winch and increase your tractor's pulling power by hundreds of pounds. You can tailor a Ford tractor to your exact job requirements by choosing from over 100 different attachments.**

Ford
TRACTORS AND INDUSTRIAL EQUIPMENT

*You see more* **FORDS** *because they save more money!*

# HIABOB

## THE HYDRAULIC CHAMP

*Outperforms Loaders Costing Five Times as Much*

*The*
**HIABOB**
*cuts pulpwood handling costs*

- Less than 3 minutes per cord
- Requires but 11 inches of truck bed space
- Weighs less than 1600 lbs.
- Over 250 in service
- Loads—unloads other units as well as its own
- Mounts on tractors, trailers and trucks
- Lowest cost most versatile loader on the market
- One man operation
- Loads 8′, 5′3″ or 4′ pulpwood

## DIESEL POWER EQUIPMENT

**ELY, MINNESOTA**

*Dealers throughout Canada*

N. A. Burkitt Inc.
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Paul Equip. Co.
Bemidji, Minn.

For further information contact your local dealer or write to Diesel Power Equipment, Ely, Minn.

**ALASKA'S LARGEST LOGGING CAMP** at Hollis on Prince of Wales Island is 40 air miles west of Ketchikan. Average annual production will run to 40-50 million bd. ft., all truck-logged. Ketchikan Pulp Co. plans to discharge 400,000,000 bd. ft. of logs into saltwater at this site in 10-year period. Company-owned houses are at left; mess hall, office, etc., at right. Along the road are employe-owned homes.

***A SPECIAL FIELD REPORT FROM ALASKA***

# How Air Survey Is Done in Alaska

## What air pictures showed . . . also on-the-spot description of Ketchikan logging progress for pulpwood in Northland

**By WARD C. WILLIAMS**
**PULP & PAPER District Editor**

—Ward Cove, Alaska

● A major development in pulpwood production planning for Ketchikan Pulp Co. is completion of an intensive aerial survey—unique in this Northern territory. The company has invested a considerable sum in acquisition of high-quality aerial photos of the rough, hilly or mountainous forest-shrouded terrain, and in coordinating the photo work with a moderately intensive program of timber cruising with field crews.

Detailed type maps are being produced, so that it is now possible to make timber cutting plans several years into the future. This work is being done under Art Brooks, manager of the Timber Division, and Ted Yocom, chief forester.

A change in pulpwood log scaling procedure has been instituted. The original contract with the U.S. Forest Service called for computing volume of pulpwood logs on a cubic foot scale and charging for these at a unit rate per 100 cu. ft., with a separate price for sawlogs, which were scaled on a board foot basis. Now the contract has been modified and all logs are scaled for board foot content. (Ketchikan Pulp had contracted for 1½ billion cu. ft. of timber over a period of 50 years. This is spread over 364,000 acres.)

The cubic foot scale, incidentally, is now the standard for timber sales made by the British Columbia Forest Service. But it did not meld with the habit and custom of Alaska loggers, sawmill operators and the new pulp mill operators, the majority of whom learned their work on the U.S. West Coast, where board foot log rules are the standard. Even though USFS

**All pictures of Alaska pulpwood logging—taken from light plane or on ground by PULP & PAPER's District Editor, Ward Williams, of Seattle, sent to Alaska especially to get this exclusive story.**

pulpwood stumpage was sold in cubic feet, all transactions involving log purchases and contract loggers were carried out in board feet. Reasons were: (1) All logs did not end up in the pulp mill, as many were traded or sold to sawmills or a plywood plant; (2) log purchases made from independent loggers were in board feet; and (3) loggers and manufacturers were unfamiliar with the cubic scale.

Then, too, the actual cost of the computations of timber cut and sold was increased. Also, recovery of finished pulp per unit of pulpwood, in order to consistently compare with known factors, from other West Coast U.S. mills, has to be in similar terms.

W. H. Johnson, assistant regional forester at Juneau, said:

"The modification of the contract required a lot of careful thought and numerous joint discussions between the company and the Forest Service. One of the important keys to the problem was agreement on a converting factor between cubic foot and board foot scale. This was used in calculating the present price structure."

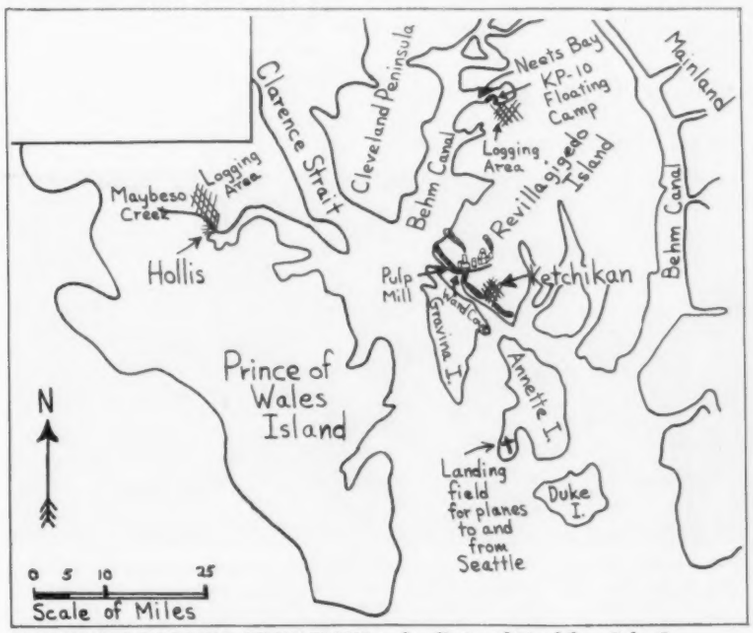
In the logging department, Ketchikan Pulp recently put Alaska's first Washington Trakloader to work at its Hollis Camp on Prince of Wales Island.

**HOW AIR SURVEY WAS DONE** . . . Ketchikan Pulp's was the first intensive aerial survey in the Territory. Since it started, Pacific Northern Timber Co. has had part of its "pulpwood allotment" (Wrangell area) photographed. In fact, Ketchikan's survey contract last year was a joint project with Pacific Northern Timber.

This past summer the Forest Service has cruised an entire area, using a helicopter for transporting the cruising parties. However, there was no aerial photography involved in the project.

The 1952 and 1954 surveys for Ketchikan Pulp were made from a Cessna 170, on wheels, and the 1955 from a Cessna 180, on floats; the 1956 survey from a Beechcraft Bonanza, on wheels, equipped with automatic pilot.

**SWOOPING DOWN OVER HOLLIS OPERATIONS** in light plane, operations appear to be routine. Take another look at those roads. They average $30,000 a mile, with some costing up to $50,000 a mile. Soil and ground conditions are not conducive to good road building.




**MAP SHOWS LOGGING OPERATIONS** and mill site of Ketchikan Pulp Co.

Ketchikan Pulp has complete coverage on the 786,455 acres included in its timber purchase allotment, 99,600 of which are on the northeast corner of Revillagigedo Island (on which Ketchikan is located) and the balance takes in approximately the north half of Prince of Wales Island.

When the Ketchikan Pulp Co. Timber Dept. started its activities, a ground survey, made with its aerials as a base, indicated that the timber was falling short of the Forest Service original estimate. A joint reinventory on the allotment on an extensive basis in 1955 indicates that on an overall basis the allotment will probably come up to, or at the worst be slightly less, than the original estimates.

Ketchikan Pulp now has its intensive survey complete on over half the allotment, but has only completed calculations on about one-third of the area, so it does not yet feel free to make any positive statements, especially since ground work has been limited to Revillagigedo Island and the east coast of Prince of Wales and is not completely representative of the entire area.

The Ketchikan timber management is not ready to agree with some views that an Alaska area can be laid out for logging in advance by aerial photos. A preliminary layout can be achieved by the use of the photos and the planimetric maps which Ketchikan Pulp has prepared from photos by H. G. Chickering, Jr., consulting photogrametrist, of Eugene, Ore., but it will engineer its own logging areas from the ground as well, says Mr. Brooks, manager of the Timber Division.

Ketchikan Pulp's aerial survey has

**LOGGING PROBLEMS ARE MAGNIFIED** at Hollis operations. Reasons: Extremes in poor soil composition (rugged and too rocky for tractors or too soft); weather (extremely damp), and topography (steep, nearly too steep, for trucks in all but a few places.) Logs are mixed hemlock, spruce and cedar with hemlock predominating.

been designed to produce not only the maximum amount of information in regard to the location, species, size and quality of the timber but also to give the maximum amount of advanced information in regard to the engineering and logging problems.

Particularly in Alaska the cost of conducting such a survey is only a fraction of what it would cost to conduct a 10% cruise by the conventional strip methods.

The aerial photo work was contracted out to Pacific Aerial Surveys, of Seattle, in 1952 and 1954, and to Western Aerial Contractors, of Eugene, Ore., in 1955 and 1956.

The original photos were flown at a scale of 1:12000 (1 in. equals 1000 ft.). Ketchikan Pulp switched to a scale of 1:9600 (1 in. equals 800 ft.) in 1954 and all subsequent photos were flown at that scale. All photographs were taken with a single lens standard precision type mapping camera equipped with between the lens shutter, with an effective image area in the focal plane of 9 in. x 9 in., and with a focal length of 12 in.

"At this date the field survey work has been completed on well over 400,000 acres, including all of the allotted area on Revillagigedo Island," says Mr. Yocom, chief forester. "During the winter months we plan to complete the final compilations for the entire area covered by the ground parties. Final compilations, maps and survey data have been completed for more than 300,000 acres to date."

**HOW ACCURATE IS AIR SURVEY?** . . . The principles involved and the accuracy of results hinge directly on:

1. Ability to recognize and classify each forest type on the photos according to its age, species, composition, density and average stand height.
2. Ability to delineate accurately the external boundaries of each forest type as defined above.
3. Ability to recognize and delineate the area that is accessible to the logging equipment and logging systems in use today.
4. Ability to estimate the percentage of loss in volume due to defect and breakage for the different areas in the allotment.

"Our procedure is to pretype the photographs as accurately as possible," said Mr. Yocom. "We then take about a 1.5% ground cruise of the area taking notes on defect and breakage and checking all forest type lines as we go. For volume samples we take ¼-acre rectangular sample plots along predetermined meandered cruise lines with the location of the plots being determined by random methods.

"The plots are carefully measured and each plot is classified according to the type of timber found on it, in using the same criteria as that used in naming the forest types. As any one unit is finished all plots classified the same are added and the sum averaged to determine the gross volume per acre in that particular type. A net figure is obtained by reducing the gross figure by a defect and breakage percentage figure calculated from field observations.

"After the field work is done the entire area is retyped. By using the plot data, the field maps and all the other information gathered while in the field, the photo interpreter is able to make many refinements and corrections of the previous work. The corrected type lines and stand classifications are then transferred to a base map by use of the radiator line plot-

**LOAD AFTER LOAD OF ROCK,** the bigger the better, is topped over "muskeg" type ground with centuries of deposits of vegetable matter mixed with mineral soil. Here, Lorain crawler drops load of rocks into one of five KPCo. trucks at Hollis.

**LOGS, LIMBS, STUMPS** and rocks, as many as possible, are put into roadbed. Final surfacing is with gravel, readily available at Hollis logging operations on Prince of Wales Island. Stumps are covered, as tractors bog down and hang up trying to remove them.

**SPECTACULAR SLACKLINE SKIDDER ON FLOATS AT NEETS BAY** features 155-ft. high A-frame. Panorama shows turn of logs (arrows) in 3 sequences. At left, logs are in air; at center, they hit the beach; at right, they are in water. Compare size of A-frame with bunk house. A-frame picks up logs 1500-ft. from shore and can also swing logs from deck to salt water. 500M bd. ft. of spruce logs (5 to 9-ft. dia.) make up float. Entire unit contains nearly 750,000,000 bd. ft.

ter. Acreages and final volumes are then determined from these final maps.

**RESULTS ARE SATISFACTORY** . . . "Our results apparently are quite satisfactory for we have checked them against actual recovery figures in several areas and in all cases they have been within a 5% (plus or minus) of the actual scaled volumes taken from the area.

"It is also interesting to note that we are using the photos for picking out preliminary road locations before even going into the field. Log dumps, cutting boundaries, setting boundaries, swing roads, creek crossing and even spar trees are predetermined on the photos. Although we are doing this work more or less on an experimental basis we find that we are experiencing gratifying results. The number of man-hours required for laying out an area can be reduced a great deal by having this advanced knowledge of the area. Many blind starts on road locations can be eliminated entirely and the proper location of spar trees can often be determined exactly by careful study of the photographs.

"The timber inventory work completed indicates now that the allotment may contain a little less timber than the Forest Service estimates indicated; however, it does not appear to be a serious shortage at this time. The area of merchantable timber available is much less than their estimates indicated but is partially offset by the fact that the net volume per acre in the merchantable stands runs much higher than their estimates indicated. Our inventory figures to date indicate that the average volume per acre of all the merchantable stands in our allotment run about 39,000 bd. ft. per acre and that about 30% of the land area supports merchantable stands of timber."

**REQUIRING 100 MILLION BD. FT.** of logs per year, Ketchikan Pulp Co. operates two fair-sized camps of its own and contracts out to a dozen-odd logging companies scattered throughout a large area of the Tongass National Forest in southeastern Alaska.

The company's two operations are (1) a floating A-frame at Neets Bay on Revillagigedo Island, approximately 35 airmiles north of the Ketchikan Pulp Co.'s mill and headquarters at Ward Cove; and (2) a truck logging show at Hollis on Prince of Wales Island, 40 air miles west of Ketchikan.

All logs from both Neets Bay and Hollis are flat rafted (or bundle-rafted in bad weather) to the mill, towed by independent tug boats.

The country has these disadvantages for logging:

1. All transportation and log storage are on salt water.

2. Camps, close enough to town by chartered plane, are far removed when vital parts or supplies are required in an emergency. (Answer: stock up well in advance on needed items.)

3. The ground is steep, nearly too steep, for trucks in all but a few places.

4. Soil and ground cover is too rugged and rocky for tractors, is extremely tough on logging line and rigging; if the ground is not too rocky, it's usually the muskeg-type, too soft for tractors.

5. Good timber is scattered, which means that most pulpwood logging is for small hemlock.

6. The weather is extremely damp and the cost of labor is high, as is cost of supplies and transportation.

These problems individually are no worse than in many places in the states. Taken all together, they mean that loggers in Alaska have to work harder and manage better than they did in the states.

**HOLLIS CAMP IS ALASKA'S LARGEST** . . . The Hollis Camp of Ketchikan Pulp, first visited by a PULP & PAPER editor in 1954, is the largest logging operation in the Territory. It is planned to dump 400,000,000 bd. ft. of logs into salt water at this site. Average annual production will run about 40-50 million bd.

**WORKHORSE NOSES RAFTED LOGS** at Hollis rafting area. All logs from two camps, Hollis and Neets Bay, are flat rafted (or bundle-rafted in bad weather) to mill. Many problems posed by log rafting prompt Ketchikan Pulp to consider self-dumping steel barges for future operations. Normal size raft has 500M bd. ft.

ft., all truck-logged, providing about 10 years of logging in this one location.

The camp is set up on a permanent basis. About 90 men are employed, a number of whom have their families either in company-owned buildings or homes they build themselves adjacent to the camp. Several loggers have special use permits from the Forest Service for private homes and commute by boat; some go back and forth for lunch by skiff and kicker. There is even a school at Hollis.

**ROAD BUILDING IS SLOW** and expensive, with costs up to as high as $50,000 per mile; $30,000 is about average. Pioneer roads are replaced by an entirely different system. Here is how Ketchikan Pulp builds its roads:

When the location for a new road is determined, a spar tree is selected or raised at the end of existing road. Then an Allis-Chalmers HD-20 crawler with triple drum is brought in to high-lead felled timber out ahead of it on the right-of-way and a cold deck is built up at the tree. About the maximum distance for this type of high-leading is around 800 ft. When the road is built out to the limits of the logged right-of-way, the triple drum is moved up and another 800 ft. of future roadway logged.

Excavation in road building is impractical and nearly impossible, on any but the most solid foundations. Soil and ground conditions are not conducive to good road building. The upper layer, from 3-10 ft. depending on location, is like a giant sponge. In dry weather, it dries out only nominally for the top foot or two.

The soil is of the "muskeg" type, with centuries of deposits of vegetable matter mixed in with the mineral soil. All road construction is put on top of this ground. Load after load of rock, the bigger the better, is dumped on top of the ground. As the final grade is reached with this "fill," smaller material is heaped on. Stumps are covered, because a tractor attempting to take them out bogs down and hangs up on the normal forest floor.

As many logs, limbs, stumps and rocks as possible are put into the roadbed. Final surfacing is with gravel, which, fortunately, at Hollis has been readily available. However, the regular run of gravel has enough mushy soil in with it that it must be washed.

Another drawback to road building is that the location and extent is strictly limited. Only the better stands of timber will begin to support the fair-sized truck logging operation.

The mucky layer described above is 10-12 ft. deep on the bottomlands and around 3-4 ft. in depth on the hillsides. In about one spot in 50, Ketchikan Pulp has found gravelly ridges built up along stream beds and these are the only places where logging tractors have been found practical. KPCo. keeps one Allis-Chalmers HD-20 with Carco winch and arch busy logging but its production is a small portion of the total output.

When building roads, KPCo. puts in as few culverts as possible to properly drain the grade, since it is difficult to clean out proper footing for culverts. Log culverts with cedar punching are used, since these last almost indefinitely in the uniformly wet soil and can withstand having heavy rock dumped directly on them, not possible with metal culvert.

**EXTENSIVE MAINTENANCE NOT NECESSARY** . . . A Caterpillar road patrol grader keeps Hollis roads in good shape. The soil around one land-

**SOME "FAIR-SIZED LOGS"** are loaded on truck trailer truck by this Lorain crawler with Young high-hinge heel boom. Ketchikan Pulp Co. requires 100,000,000 bd. ft. a year. A major development in pulpwood production planning by company was recently completed intensive aerial survey, unique in this Northern territory.

**SALMON . . . ART BROOKS . . . AND TWO REICHELS, FATHER AND SON.** ART BROOKS, Timber Division Mgr., not only has a tough job keeping Ketchikan Pulp mill supplied with logs but he finds holding up a 54-lb. King salmon for the cameraman quite a chore, too. In the picture at left, he is seen with DR. FRANK REICHEL, SR. (right), Chairman of Board of both Ketchikan Pulp Co. and American Viscose Corp. Weight of Dr. Reichel's catch was not made known. In the picture at right, Mr. Brooks, still posing with his 54-lb. salmon, is aided by DR. FRANK REICHEL, JR., of American Viscose and Ketchikan Pulp. The two Drs. Reichel, who have important duties in American Viscose, were also prominently involved in the developments leading to Alaska's first pulp mill.

ing is called "cement"-type mud—workable on a dry day, but impossible to negotiate during heavy rains when it turns to muck. Practically like rock when dug out of the hillside, it falls apart after the tractor runs over it. A triple-drum Carco mounted on an HD-19 will be brought into this landing. Instead of anchoring it to a buried stump, impossible to do here, a specially constructed sled will be brought in and the tractor rested on it.

The HD-19 and 20's have worked out successfully. Their high centers and torque converters make them good mud machines.

Loading out the Kenworth logging trucks on the tractor logging side is by Lorain 2-yd. shovel equipped with a Young high-hinge heel boom, specially designed for loading long logs alongside the truck and trailer instead of from the top. It is powered by a 200 hp Waukesha diesel with a Twin Disc fluid clutch.

When PULP & PAPER visited Hollis Camp, there was one tractor logging side being loaded out with a shovel loader; a right-of-way cold deck just logged with a triple drum mounted on a tractor; and three Washington 207 yarders cold decking. The yarders are powered by 275 GM diesels.

Logs are mixed hemlock, spruce and cedar but predominantly hemlock. One landing had to be blasted out of solid rock. There was not room enough to put the yarder as close to the spar tree as was desired, and not enough room for trucks to come up and turn out around; besides it was too steep and muddy for trucks to be able to back up. Logs from this cold deck were swung down to the next lower landing and loaded out with a Lorain 2-yd. shovel loader, equipped with Young high-hinge heel boom and powered by a Waukesha 200 hp diesel engine.

Hollis isolation requires a shop that is probably the equal of most logging equipment shops in the states.

**NEETS BAY IS SPECTACULAR . . .** Biggest and most spectacular piece of logging machinery in Alaska is Ketchikan Pulp Co.'s slackline skidder on floats at Neets Bay.

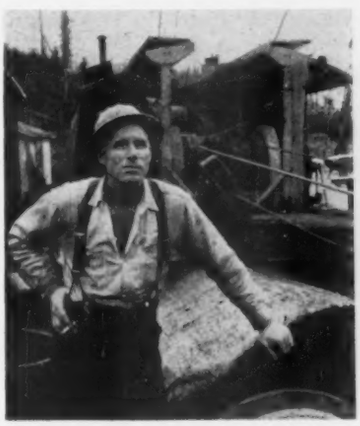
It represents a large investment in machinery and line and in the timber which went into it. Five hundred thousand bd. ft. of spruce logs from 5 to 9 ft. in diameter make up the float, which measures 120 ft. wide by 185 in length. The two logs in the stiff legs on the A-frame contain 25M and 27M bd. ft. It is 155 ft. from the float up to the skyline block. Another 100,000 bd. ft. is in the horizontal stiff leg. This is a total of nearly ¾ million bd. ft.

So far as is known, the skidder at Neets Bay is the largest internal combustion combination skidder and slack-line machine in operation today anywhere. Washington Iron Works reports that the Ketchikan Pulp skidder is the biggest built in the last 25 years.

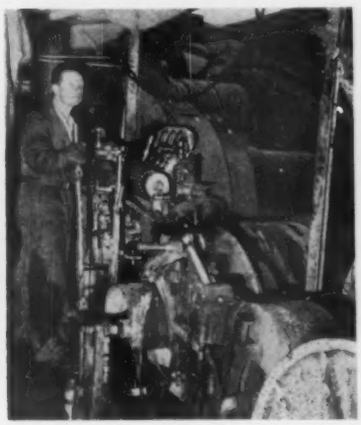
Logs are brought in by one of two complete sets of four chokers. Separate loading is employed where the yarding distance is the greatest. Choker lines are 18 ft. long and measure ⅞-in. in diameter. The A-frame has been used to yard distances up to as great as 2500 ft. The preferred distance is 1400-1800 ft.

The skidder does not bring in logs from a semi-circular area. It logs out skidroads about 200 ft. in width. The normal pattern is a series of parallel skidroads of about equal length. The A-frame averages about four roads per setting of the float before it has to be moved along the shore to a new location. By shifting the float in place and re-rigging the tail block, the unit manages to stick fairly close to the desired pattern.

The skidder makes possible a fairly flexible program in keeping up a sufficient log supply for the pulp mill. It can be used to hot-log from the mountainside right into salt water. At the same time a high-lead cold decking operation may be working above the upper limits of the skidder. The skidder can yard these cold-decked logs to water as soon as they are



**FLOYD WYCOFF,** Superintendent of Ketchikan Pulp Co's. Neets Bay operations, helped build floats and rig lines on this yarder. Logs are bucked in 48-ft. lengths.



**EASY DOES IT.** Yarder Engineer at Neets Bay, JACK GOUGH, guides log into yarding area. Controls are variable pressure air with valve components by Westinghouse.

"HOW'S SHE COMING?" JAN ANDRESEN, Woods Foreman at Hollis, largest logging operation in the Territory, keeps up-to-date with this portable and mobile radio set.

WATCH THAT LEAD. REX STRONG, Superintendent at Hollis, checks fairlead for strawline on Carco three-drum winch on Allis-Chalmers HD-20 tractor. P.S. It was O.K.

docked, or it can return to the same location in a month or sometime next season. It only takes a day to set up. Logging signals are transmitted by Radiowhistle portable sets.

**BIG YARDER OUTPUT HIGH . . .** Wear on lines of the big yarder is worse because of corrosive salt air and water. As there is very little topsoil in the timberland, logging lines are continuously abraded on bedrock, resulting in about 20% less wear.

Production with this yarder is about 1¼ million ft. of logs per month on yarding from the woods; yarding from cold deck is considerably higher.

At Neets Bay the timber has been averaging about 30-35,000 bd. ft. per acre. A more normal average for southeastern Alaska as a whole is around 25,000 per acre.

Utilization standards are to fell everything down to a 10-in. dbh; logs down to a 6-in. top at least 16 ft. long are removed from the woods. At Neets Bay practically all the timber is hemlock; only one log in 30 will be spruce. The hemlock averages around 18-20-in. dbh. Everything is bucked into lengths as close to 48 ft. as possible. Very few trees are lost from breakage. Any broken logs that will make good pulp are logged in.

Cedar logs are few in number and low in quality; there is little Alaska market for cedar. Less than 100,000 bd. ft. of cedar was milled last year in all Alaska. Cedar rafts (Davis) are made up for shipment to Puget Sound mills. This is a special dispensation by the Forest Service, which normally requires logs to be milled in the Territory.

A normal-size hemlock-spruce raft used by Ketchikan Pulp contains about 500,000 bd. ft. Many problems posed by log rafting have prompted the company to think about self-dumping steel barges for the future. However, practical application requires heavier production at each location than is presently possible.

**FORESTRY ASPECTS . . .** Foresters in southeastern Alaska are confident that second growth reproduction will adequately restock the clear cut logging areas. Limited experience in the past indicates the spruce will probably dominate the new mixed hemlock-spruce stand. Cedar does not stand too favorable a chance in reseeding.

Ketchikan Pulp Co. foresters and the Forest Service plan to cooperate on making "seed trap" studies on the larger tracts to determine the extent of natural reproduction. This examination will be made about the third year after logging. If natural reproduction has not been successful, steps will be taken to artificially seed the areas, probably by aircraft following brushkilling.

**ANNUAL GROWTH REPORT . . .** Chief Forester Ted Yocom states that the annual growth per acre in southeastern Alaska is comparable to that of the Puget Sound area.

Rotation periods for sawlog size trees is estimated at around 100 years and pulp trees at 70-80 years. Spruce, the favored species for sawlogs and veneer logs, reacts similarly to Douglas fir on the west coast. It takes hold well and grows rapidly.

Practically every day is a flying day around Ketchikan but there are few days after the snow melts when the atmosphere is perfect enough to make high altitude photos.

## Timber Division Personnel in Alaska

**Art Brooks,** manager of the Timber Division of Ketchikan Pulp Co. from its founding, has been associated with large operators in the U.S.

**W. R. (Ford) Knott,** assistant to Art Brooks, is a logger from west coast of Vancouver Island.

**Ted Yocom,** chief forester, was formerly Weyerhaeuser Timber Co. forester from Longview and Monroe, Wash. An Iowa graduate.

**Rex Strong,** superintendent at Hollis Camp, previously worked for U.S. Plywood at Cosmos, Wash., Diamond Lumber Co. and Willamette Valley Lumber Co. in Oregon.

**Floyd Wycoff,** superintendent at Neets Bay, was former skidder foreman for Crown Zellerbach, Neah Bay, Wash.

## Communication—Just 2 Ways

There are only two efficient ways to communicate between Ketchikan and outlying logging camps: (1) by radio or (2) by the small airplanes which serve the various camps, carrying mail, cargo and passengers, every day or so.

Ketchikan Pulp Co. has a very efficient communication setup, without which they would be crippled. At timber division headquarters in the pulp office on Ward Cove, six miles north of Ketchikan by road, is a base FM station on the 49 mc band. It reaches to stationary sets in the two company camps at Hollis and Neets Bay and to mobile sets in cars around Ketchikan, and to the company work boat, "Merlena," 63-ft., twin GM diesel powered.

At Hollis, there is a separate FM system on the 150 mc band to connect the office to the seven pickups scattered out on the logging sides. At Neets Bay an FM set joins the office with the floating skidder.

All FM equipment is General Electric.

Ketchikan Pulp's camps, along with nearly every other operator of any size in the Ketchikan district, maintain AM sets for emergency use for after regular working hours. They can talk direst to the airlines, the Coast Guard or the army's Alaska Communications Service.

**New Unloader for Chips**

Oregon Pulp & Paper Co. installs Hydr-o-Flex dumper.

# Aid to Increase Chip Supply

● The picture shows a technique for chips borrowed from the grain-handling field.

Potential chip producers may find this a new development that will make it profitable for them to get into the business.

The possibility appears to have been opened up by the recent introduction of a grain-type "load dumper" for unloading truck-hauled chips at the pulp mill. Two of these Hydr-o-Flex dumpers are known to be operating in the industry—one at Oregon Pulp & Paper Co., Salem, Ore. and the other at Crossett Co., Crossett, Ark.

Chips arriving via tractor-pulled semi-trailer at these installations are unloaded by simply driving the complete haul unit (including tractor) onto the unloader platform, one end of which is then elevated 50°, thus discharging the chips by gravity.

This sort of unloader makes practical the utilization of various sorts of tractor-drawn units for hauling chips, the opportunities ranging from the semi-trailers built specially for this purpose, and now in extensive use, to conventional cargo semis. In fact, there are commercial trucking firms which now see prospects of using regular highway cargo semis for chip hauls, either on a continuous or intermittent basis. Furthermore, some even feel that the new unloaders could open up the field for using the commercial highway truck trains of tractor-semi- and full-trailer for transporting chips. These offer greater load capacity than would be legally possible on public highways by any other means.

Another factor is the prospective easing of tight rail-car situation as far as chip-hauling is concerned.

The Salem installation represents the combined efforts of Oregon Pulp & Paper management, Consulting Engr. Harold Wahl; McManama & Co., construction contractor; Air-O-Flex Equipment Co. of Minneapolis, manufacturer of the components, and J. J. Ross Mill Furnishing Co. of Portland, Ore., Far West representative for Air-O-Flex.

Cecil Taylor, Oregon Pulp's general manager-manufacturing, told PULP & PAPER: "We installed this unloading unit to promote increased utilization of wood at small mills within the area tributary to our plant."

The installation had a marked favorable effect, he says, on influencing the operators to convert their clean residue wood into pulp chips. Now the Salem plant receives chips from small mills of a 40-mile radius, the volume running as much as 40% of the total wood used.

### How It Operates . . .

The unloader consists of a load platform on which both tractor and loaded semi and driven. Telescopic lift cylinders tilt the platform, with complete transport unit intact, up to the 50° final discharge angle in 90 seconds. These cylinders are activated by a hydraulic unit, housed in small building near the platform, consisting of two 10 hp motors, each of which drives a pump delivering fluid to the cylinders at a pressure of 800 psi.

The unloader is built to actually discharge a 15-unit load of chips in three minutes. The associated system for disposing of the chips has capacity for handling 30 units per hour.

From trailer or semi-trailer the chips slide directly into a 15-unit surge bin and subsequently removed from there by a chain conveyor delivering to a Rader Pneumatics high-pressure conveyor system. By means of an RP 4-way "air switch" the flow can be diverted to two open storage piles or to two silos. Of the four 10¾-in. OD pipes, the storage transports are about 400-ft. long and provide a free throw of around 80-ft. at the discharge; those leading to silos are 650-ft. long, elevating 110-ft. enroute.

Scales are available for incorporation with the Hydr-o-Flex platform for print-weighing the transport units before and after dumping, thus providing objective data records concerning the quantity of chips delivered.

## Florida Now Leads In Tree Farm Acreage

The 16-year-old industry-operated American Tree Farm system of growing timber as a crop on taxpaying forest lands gained 3,709,310 acres in 1956, reaching a total of 41,548,217 acres in 44 states.

The 10% increase in enrolled acreage is announced by C. A. Gillett, managing director of American Forest Products Industries, Inc.

Florida took over national leadership with 4,290,800 acres and became the first state to pass the 4 million acre mark. Other leaders are Georgia, 3,824,674 acres; Oregon, 3,667,778; Alabama, 3,614,041; Texas, 3,431,304; Arkansas, 3,405,081; and Washington, 3,374,033. Mississippi continued to lead in number of Tree Farms certified, being first to reach the 1,000 mark in November. She was followed by Texas with 914 Tree Farms and Alabama, 727. New states in which Tree Farm programs were launched in 1956 were Connecticut, Vermont, New York and Indiana.

## How Harvesting Methods Reduced Manpower 19%

Mechanization of woods operations has reduced the labor force required for harvesting Eastern Canada's pulpwood by 19% during the past five years, says H. A. Sewell, chairman of the woodlands section, CPPA, who is also vice pres. in charge of woodlands for Ontario Paper Co., Thorold, Ont.

"We cut just as much wood last year as in 1951," he reported at CPPA convention in Montreal in late January, "and we did it with 19% fewer men. This was accomplished by increasing mechanization, especially in the more modern and efficient camps."

A few years ago horse logging was prevalent throughout Eastern Canada and most of the cutting was done with hand saws. While these methods are still extensively employed, power saws, tractors, trucks, power yarding and loading have largely replaced them, and the production of pulpwood has been greatly expedited.

Mr. Sewell says that another factor is the greater efficiency of woods labor resulting from encouragement given to year-round woods activity which has led to the creation of an experienced, skilled full-time labor force with a real interest in the industry.

How aerial photography may be used to measure the volume of wood in the big block piles of Eastern Canadian mills was demonstrated at the convention by B. G. Klowak, Marathon Paper Corp of Canada, following two years of experimentation and study. On the basis of what has been done at Marathon, relationships have been developed which allow conversion of block-pile volume into either oven-dry weight of wood of pulp production.

This method enables companies to determine the approximate volume in a pile in the same fashion as photography from the air will give a close approximation of the timber volume in a forested area. The volume of a block pile as measured by aerial or ground survey can be put to practical use by relating it directly to mill wood usage and pulp production. It was found at Marathon that block pile inventories can be converted into either oven-dry wood content or pulp production with a fairly high degree of accuracy. In addition to their use in assessing wood inventories to forecast future requirements, the block pile volume relationships can be applied to other phases of wood measurement problems at a given mill.

## Pulpwood Personals

**BRUCE FERGUSON,** pulpwood buyer for Longview Pulp Div. of Weyerhaeuser Timber Co., has been transferred to Columbus, Miss., in connection with Weyerhaeuser's entry in the southern field with its new interest in forest lands of Mississippi and Alabama. He is son of Sydney Ferguson, board chairman and former president of The Mead Corp. . . .

**LEO V. BODINE** left his 5-year post as executive vice president of National Lumber Manufacturers Assn. to become vice president of Diamond Match Co. in charge of timber and lumber, making his headquarters at Spokane . . .

**PHIL HOGAN** former logging supt. of Snoqualmie, Wash., branch of Weyerhaeuser Timber Co., is new assistant to **JOHN WAHL,** logging manager for all Weyerhaeuser Timber operations.

**JAMES A. ALTMAN** is a new forest engineer for American Pulpwood Assn. He will eventually work with APA members in the Appalachian region and assist **JIM HOLEKAMP** in some phases of the APA program in the Southern regions. Mr. Altman was for past 6 years asst. manager and forester for Starmount Co., Greensboro, N.C., with complete charge of all logging and pulpwood activities on company lands. He has a b.s. degree in forestry from North Carolina State.

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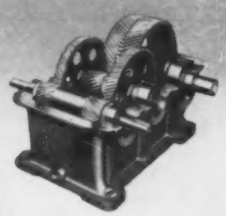

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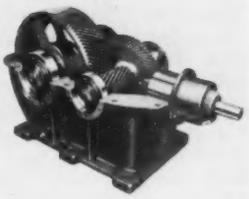

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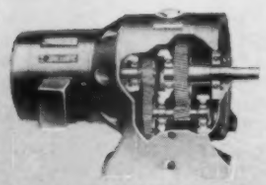

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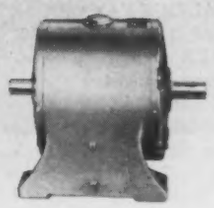

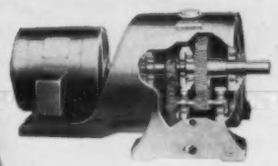

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# STRICTLY PERSONAL

## Midwest Medley

**GLEN SUTTON,** veteran Sutherland Paper Co. supt., and **LES LALIBERTE,** KVP veteran supt., were across the hall from each other in Kalamazoo hospital after recent operations. Both reported doing well now . . .

The movie "Giant" is supposedly laid in Texas, but actually many scenes were shot on ranch near Tucson, Ariz., visited usually a couple times a year by **MILT BAILEY,** vice pres., Bulkley Dunton Pulp Co. It is home of the Baileys' daughter and son-in-law, and Milt and Josephine will be there again about time this appears in print. . . . **HARRY MOORE,** president of Beloit Iron Works, back from a rest in Naples—Florida, not Italy . . .

**GLENN STEWART,** ad manager for KVP Co. and editor of its popular publication, "The Philosopher," while in Europe, encountered the owner of the only mill making hand-made paper in Britain. The Briton wore a Rotary button, and that's how a conversation started, which led to discovery that his son and a son of **MAX BARDEEN,** Lee Paper Co. president, were friends . . . surprise birthday party for **LLEWELLYN D. (LEW) NICHOLSON,** pres. of Michigan Paper Co. of Plainwell, on Jan. 22 . . .

From Potlatch Forests mill in Idaho, **RAYMOND L. JANES** has joined the paper technology faculty at Western Michigan College, where he graduated in '53 . . . Three WMC graduates took new jobs last month—**HENRY BONGERS** with Champion Paper, **JOSEPH BOYLE** with Allied Paper Mills and **EUGENE THIEL** with Appleton Coated Paper . . .

**VALERIE VAN DEN AKKER,** daughter of **DR. JOHANNES VAN DEN AKKER** of the Institute of Paper Chemistry was married Jan. 26 to **GEO. EMMERT.**

**CHARLIE WADDLE** has a full-time job as engineer in KVP Co.'s maintenance dept. in Kalamazoo, but that didn't keep him from being re-elected for a third term as mayor of Galesburg, Mich., ten miles from Kalamazoo. The town's 1200 residents pay him $48 annually to tend to municipal affairs on evenings and weekends . . . **M. V. (MOLLY) MOLSBERRY,** chief engineer, Consolidated Water Power & Paper Co., and Mrs. Molsberry, had an opportunity to visit their son who is in training with General Electric Co. in Schenectady, N.Y., on a recent trip east . . . **RUDY HERBIG,** manager of the Central Western district for Reliance Electric & Engineering Co., Chicago headquarters, has recently rounded out 40 years with that company. He and his wife, Grace, celebrated by a vacation at Del Ray Beach, Fla. . . .

**Now over here, "J.G.," we have . . . I said, over here . . .**

**E. A. MEYER,** formerly gen. mgr. of Menasha Printing and Carton Co. (now Marathon Corp.), was elected board chairman of Badger Paper Mills, Inc. **WILLIAM J. VAN DYCK** is the new vice pres. and sales mgr. of fine paper . . . Other directors are **W. F. ADRIAN,** pres., treas. and gen. mgr.; **E. E. ERDMANN,** vice pres. and sales mgr. of Freshrap paper; **E. A. MEYER JR.,** secy.; and **S. E. EASTMAN,** asst. secy. and asst. treas. . .

**GERALD R. GRANT,** former asst. sales mgr. at Container Corp. of America's Anderson, Ind., corrugated container plant, is now gen. mgr. . . . At U. S. Forest Products Labs, Madison, Wis., **PARKER K. BAIRD,** head of paper and pulp products section, and **CLARENCE E. HRUBESKY,** head of testing and fiber products section, have retired. Both were on the lab's staff since the 1920's . . .

**JOE M. CONWAY,** former Charmin Paper Mills president, continues as a director in the newly organized Charmin Paper Products Co., now a subsidiary of Procter & Gamble. He also will serve as special consultant to P&G for paper products. **H. G. WINTGENS** is executive vice president of the new organization, **M. J. AUCHTER** is manufacturing vice president, **JOHN MALONEY** is sales vice president, **P. M. CHIUMINATTO** is vice president and treasurer, **DONALD FAIRBAIRN** is advertising manager, and **ROBERT E. KISSELL** is general manufacturing supt. . . . **HOWARD J. MORGENS, P&G** executive vice president, will serve as president of Charmin Paper Products, **H. S. COLE,** vice president of P&G's Toilet Goods division, will be vice president and general manager of Charmin, and **T. M. WARRINGTON** of P&G, becomes advertising vice president. They remain at P&G headquarters in Cincinnati . . .

**IAN WATSON,** now with American Box Board Co., Filer City Division, Filer City, Mich., transferred there from the Mosinee Mills in Wisconsin. . . . **HOWARD STEPHEN** is pulp supt. for Huss Ontonagon Pulp & Paper Co., formerly the National Container mill, at Ontonagon, Mich., being rebuilt by Huss Lumber Co., of Chicago. Mr. Stephen was with National Container at its semi-chemical pulp and board mill at Big Island, Va. . . . **EDWARD BOYLE,** formerly with Waldorf Paper Products board mill at St. Paul is now gen. supt. of Rocky River Paper Co., Three Rivers, Mich. . . . **STANLEY G. BEVIS JR.** is plant mgr. for V. C. Baxter Co., Franklin, O. He was with Moraine Paper Co. division of American Envelope Co., at West Carrollton, O. . . .

A Malayan and a Finn, from far apart corners of the world, were recent visitors at the International Falls, Minn., mill of M&O Paper. **DAVID TAMBYAH,** 31-year-old Singapore editor, saw his first snow there, and was amazed at charge accounts and credit purchases—"it's cash and carry in Singapore," he told Mgr **BILL SCHLAFGE**'s staff at the Falls . . . A young engineer from a mill in Simpele, Finland, on a tour of U.S. and Canadian mills, **ERKKI RIIHIMAKI,** was the other visitor. He spent 8 months in Maine mills before his tour, and is traveling on a scholarship. . . .

**DON A. HUGHES,** representing R. T. Vanderbilt Co., Inc., is established at Kalamazoo, Mich., as representative in that area. His headquarters are at 125 West Walnut St. . . .

**RICHARD E. WATSON,** who is 69,

has retired after nearly 53 years service with Wisconsin Wire Works in Appleton. He was supt. and treasurer of the firm. He started as a handy man and saw the works develop from use of hand operated looms to the automatic wire looms of today. . . .

## Earl "Doc" Warner Dies

Earl E. "Doc" Warner, for almost 40 years an application engineer with General Electric and a pioneer of pulp and paper mill electrification, died Jan. 1, 1957. He was born in Mason County, Ill., in 1893, graduated from Univ. of Illinois in 1915, when he joined G.E. For the past 25 years he concentrated on application of electric drive systems in pulp and paper.

## Northwestern Supts. Set Two Meeting Dates

Joe J. Jenkins, Northwest Paper Co., and chairman of Northwestern Supts. Division, announces the group will meet Mar. 28 at the Northland Hotel, Green Bay, Wis. Main speaker will be an authority on some phase of human relations.

Second meeting of the year will be on Sept. 13-14, at Hotel Duluth, Duluth, Minn. There will be visits to Northwest Paper Co., Diamond Match Co., and Wood Conversion Co.

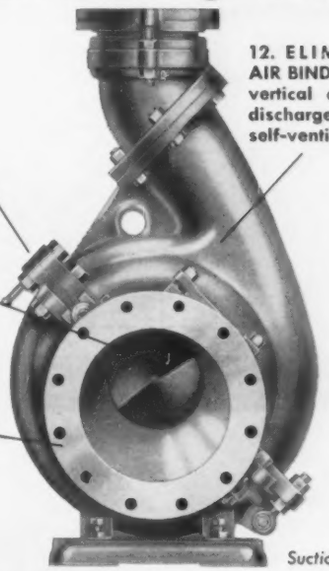
## Southern Sidelights

The Southern Exposure: Staff at North Carolina Pulp Co. (soon may be merged with Weyerhaeuser Timber Co.) has had a recent face-lifting. **RUSSELL OWEN,** No. 2 paper machine supt., is now asst. to **ELMER LEAVITT,** N.C. mgr. **STUART SAUNDERS** takes over as supt. of No. 2 machine. **FRED KEYES** is now pulp mill supt. **OMEGA ROGERS,** formerly supt. of machine No. 1, has left to become paper mill supt. at new Container Corp. mill, Brewton, Ala. **RED WILLIAMS** takes over in his position.

New changes at St. Regis, Jacksonville. **J. A. HARRISON,** pulp mill supt., promoted to asst. general mill supt. . . . **L. E. GOODWIN,** asst. pulp supt. upped to top pulp position . . . **L. B. THOMAS,** tour foreman, becomes asst. pulp supt. . . . **J. L. GREEN,** onetime asst. power house supt., made instrument engineer.

At Union Bag-Camp in Savannah, **E. J. BARTLETT,** training director, has been promoted to asst. industrial relations div. mgr. **W. A. BINNS** moves into vacancy from former position as Mr. Bartlett's asst. . . . **FRANK M. JOHNSON,** former sales mgr. of Brown Paper Mill Co., West Monroe, La., has taken over as general sales mgr. of the new Dierks Paper Co. at Pine Bluff, expected in operation by September . . . **G. J. BIENVENU,** now production mgr. for


# Correct stock pump problems 12 ways with the Fig. 3135



*Suction end view.*

**1. FASTER MAINTENANCE.** Just one man can open the diagonally split, hinged casing and remove the rotating element without disturbing piping.

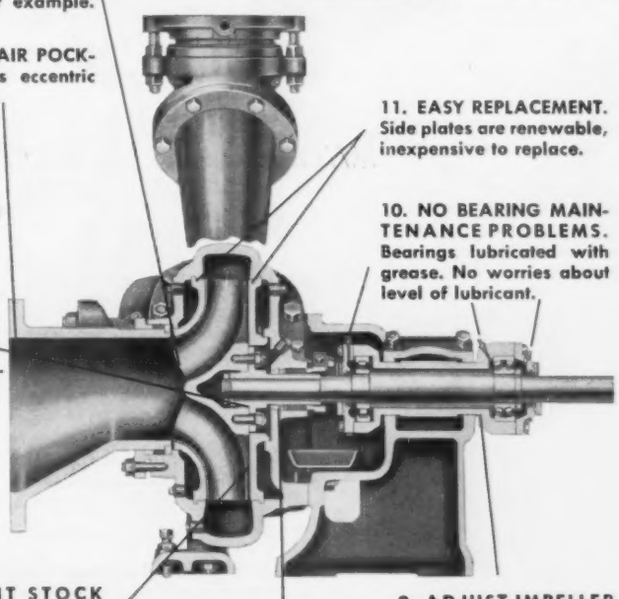
**2. MORE UNIFORM STOCK.** Screw inlet impeller shears and draws stock into impeller with minimum shock and dehydration.

**3. DIRECT CONNECTION TO STOCK CHEST.** You can choose from various sizes of this large suction opening.

**4. GET STOCK TO THE IMPELLER FREELY.** Fig. 3135 has an extra big impeller eye—8" on the 6" pump, for example.

**5. PREVENT AIR POCKETS** with this eccentric suction piece.

**6. IMPELLER SECURELY FASTENED.** Keyed sleeve and flange assembly holds impeller secure under ALL conditions.



*Cross section—shown with standard construction: roller bearings, grease-lubricated.*

**7. PREVENT STOCK JAMMING BEHIND IMPELLER.** Full open impeller has back wall ejector vanes to prevent stock accumulation behind impeller. Also helps maintain axial thrust balance.

**8. KEEP STOCK OUT OF STUFFING BOX.** Throat bushing and water seal ring keep stock particles out of stuffing box, give you longer sleeve and packing life.

**9. ADJUST IMPELLER FROM OUTSIDE.** Maintain proper clearance between impeller and casing with external axial adjustment.

**10. NO BEARING MAINTENANCE PROBLEMS.** Bearings lubricated with grease. No worries about level of lubricant.

**11. EASY REPLACEMENT.** Side plates are renewable, inexpensive to replace.

**12. ELIMINATE AIR BINDING.** Top vertical centerline discharge casing is self-venting.

*For further information on the Fig. 3135 stock pump, including performance curves, write for Bulletin 723.1.*

MEMBER

Goulds PUMPS INC. Seneca Falls New York

*Branches:* Atlanta • Boston Chicago • Houston New York • Philadelphia Pittsburgh • Tulsa

*West Coast Representative:* Goulds Pumps Western, Portland, Ore.

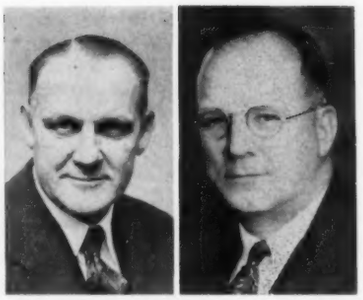
*In Canada:* The A. R. Williams Machinery Co., Ltd. in all principal cities.

# STRICTLY PERSONAL

Crown Zellerbach's Gaylord Div. converting plants. His office is in St. Louis. Mr. Bienvenu has been with Gaylord since 1927, is former gen. supt. of container and bag plants.

Southern Vignettes: Noted in millionaire-town Houston, Tex., on back of ranch wagon: "No ranch—just kids." . . .

East Texas' V.P. and res. mgr., **BUFF NATWICK**, commenting on hazards of travel in deep South, tells of time he entered a small Texas restaurant and ordered chicken a la carte. "Sorry," the waitress answered, "we haven't got any . . . all our chicken is fried." And yours truly stopping in one of Texas tougher industrial cities recently was asked by a hotel clerk whether he wanted $4 or $5.50 room. "What's the difference?" queried PULP & PAPER's Southern Editor (Bill Diehl). "We're remodeling," the clerk answered, "the $4 rooms are in the old section—they're horrible!"



**NEW APPOINTMENT . . . CLAUDE** L. HUEY (left) has been appointed mgr. of the Atlanta dist. office of Babcock & Wilcox, succeeding PAUL R. YOPP (right), who has retired after 31 years as Atlanta dist. mgr. Mr. Huey joined B&W in 1930 as a student engineer after graduating from Georgia Tech. He is a native of Birmingham, Ala. Mr. Yopp's retirement marks the end of the longest service period ever achieved by a B&W dist. mgr.

**CHESTER B. McCORD,** former mgr. of all three IP Bagpak plants, has been named mgr. of mfg. for International Paper. **ASA MORGAN** former supt. of Mobile Bagpak plant, will be his asst. Both men will be headquartered at Camden, Ark. . . . **FRANCIS BURT,** who began his career with Crossett in 1937, is new instrument control foreman of Crossett Paper Mills, the position vacated by the untimely death of **WILLARD TONEY** . . . **Brunswick Pulp & Paper** justly proud of its bright new blue and white company plane, a Cessna 310, piloted by **E. E. AMOS** . . . Brunswick recently published a touching tribute to its late company doctor, **ROBERT S. BUFORD,** who died January 2. The special issue paid tribute to a man who rarely receives much recognition outside the close circle of the mill. **DR. HOWARD COE** is acting company doctor.

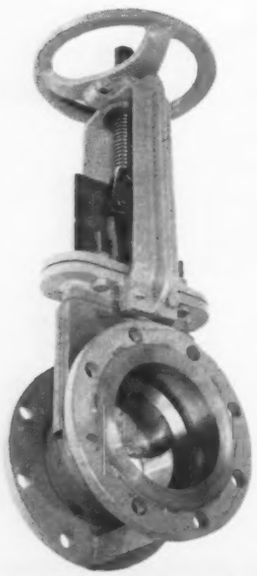
**EAST TEXAS PULP & PAPER** recently played host to more than 1,000 Texas industrial leaders, impressive way to celebrate its second birthday . . . **DAVID F. KIRN** will direct the newly developed educational and training program at CZ Gaylord Div. His office will be in St. Louis . . . **JOHN HOOPER,** chief chemist at Rayonier's Jesup, Ga., mill, and **RAY BARBEE,** finishing room foreman, won service pins. Mr. Hooper, who came from Shelton, Wash., celebrated 15 years with Rayonier. Mr. Barbee, from nearby Fernandina, has been with them 10 . . . and speaking of service, **BILL JARVIS,** salvage man for bag maintenance at Union Bag-Camp in Savannah, and his wife **GERTRUDE,** an inspector in the specialty div., have rung up a total of 100 years of service with the company . . . Union Bag-Camp, Savannah, recently won an award of honor from Associated Industries of Georgia for safety.

Congratulations due **EARL GAUDET,**

Strefco. CORROSION RESISTING PRODUCTS FOR THE PROCESS INDUSTRIES

Strefco
Reg. U.S. Pat. Off.

FURNISHES THE BEST MATERIAL FOR YOUR COMPLETE PIPING SYSTEM



Strefco TRANSITE* Lined Pipe and Fittings (Patented)

Strefco Stainless Steel Pipe and Fittings

Van-Cor Polyvinyl Chloride Pipe and Fittings

Strefco No. 100 Alloy Knife Gate Bonnetless Stock Valve

The stock valve that embodies rigidity of construction, economy of weight, cleanliness and ease of maintenance.

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Strefco STREED FABRICATING COMPANY
P. O. BOX 451 ATTALLA, ALABAMA
CORROSION RESISTING PRODUCTS FOR THE PROCESS INDUSTRIES

Standard Paper Co. supt., whose wife presented him with the perfect Christmas gift, a son. Born Dec. 27. Name: **PAUL GIRARD.**

**KARL ELDERKIN,** vice pres. and gen. mgr. of Bowaters Southern Paper Corp. since 1952 and originator of what has been called his "dream mill," has left the Calhoun, Tenn., mill to become president of Bowaters Research and Development, Inc. He has also been named a director in Bowater Corp. of North America. Leaving with him is **ED COWAN,** former chief engineer at Bowaters Southern, who will be vice pres. of research company. Direction of mill has been placed in the hands of a management team made up of **VIC SUTTON,** mill mgr., **D. W. TIMMIS,** secretary, and **C. E. OPDYKE,** treasurer. Research and development offices will be located at Calhoun. Also leaving the paper corp. to join staff of new company are engineers: **R. J. BURNS, P. V. DAVIES, G. C. DAVIS, I. C. INNIS, H. E. KIRKLAND, N. H. MARTIEN, R. C. McFALL, B. N. SCANLON, J. D. SHAVER, C. L. SMITH, J. D. STRITE, J. F. STEEDLY** and **W. J. STETSON. M. D. JONES,** construction supt., **J. F. McINNIS,** project engineer, and **I. J. PIKL,** research asst., also go with R and D.

**LEONARD HAMM** and **OLIVER PARENT** have joined Bowaters as tour bosses on new No. 3 machine. Leonard comes from St. Regis at Jax and Oliver from Southland Paper . . . No less than 22 employes of the Ecusta Film and Paper Div. recently received certificates from Brevard College for completing a special chemistry course . . . **JACK ALEXANDER,** employment supervisor at Ecusta, has been named asst. editor of Olin Mathieson *News.*

The new manager of the Crown Zellerbach-Time Inc. $31,000,000 machine-coated paper mill to be built at St. Francisville, La., **EDWARD H. NUNN,** is making plans to move to his new home near Baton Rouge during June (see his picture and announcement in last issue of PULP & PAPER). Anita Eleanor, his daughter who was raised in Oregon, is engaged to a graduating senior, **DAVID W. DICKES,** at Syracuse Univ., where she is a sophomore. He enters the air force on graduation.

## Notes from Northeast

That bright smile on President **KURTZ M. HANSON** of Champion-International Co., at Lawrence, Mass., is because for the second consecutive time, C-I's blue-white Cico-Duoset was chosen for the 48-page text of the Official Inaugural Program when President Eisenhower was sworn in. Some 67,000 lbs. were used . . . **PETER M. HARTIG** is now assistant vice president of Central National Corp. He joined CNC in 1953, makes regular

RIDGID 400A

**powers your hand tools . . .**
**saves you time and work!**

Your job is so much easier, faster when this stout little power drive turns pipe, conduit, rod for your hand tools.

Easy hand-action Speed Chuck holds tight forward or reverse. Full of RIDGID features that give you far the most time and work saving for your money—see it, try it at your Supply House.

**The Ridge Tool Company, Elyria, Ohio, U.S.A.**

RIDGID
Work-Saver Pipe Tools

# STRICTLY PERSONAL

field trips to Europe, the Mediterranean and Central and South America. He's been in paper exports since 1938.

On the move with Hammermill are **FRED E. BAHRENBURG,** now plant mgr. and **ROBERT S. YOUNG,** general supt. Mr. B. is a b.s. grad in pulp and paper from N. Y. State College of Forestry, after which he joined Strathmore Paper Co. working up to assistant to the president, and then joined Hammermill in 1948 in technical paper sales. Mr. Young is a native of Johnsonburg, Pa., started his career as a helper on rewinders 40 years ago. . . . Other changes at Hammermill: **ROBERT W. ARENTSON** moves from head of the standards section to production manager; succeeding him is **ROGER M. SOTH,** who will have **LEVERN B. "PETE" YOCHIM** as his assistant. **JOHN J. LITTLE** and **VICTOR P. MAYER** are promoted to new posts of time study engineers, and **EDWARD F. CARTER** and **JACK H. HARTWELL** become senior time study observers. . .

for Effective Removal of
Residual Chlorine!
Tennessee's liquid Sulfur Dioxide is a most efficient and economical antichlor. Removes residual chlorine and other materials which cause color reversion or yellowing with age. It also eliminates excessive residual chlorine in water.
TENNESSEE CORPORATION
LIQUID SULFUR DIOXIDE
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Tennessee's Liquid Sulfur Dioxide practically 100% pure, is also very effective as a reducing, bleaching, and neutralizing agent, preservative and pH control.
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• CYLINDERS
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We would like to consult with you on the possibilities of Tennessee's Liquid Sulfur Dioxide in your processing.
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Maine man takes Michigan bride in New York ceremony. **FRED GOODWILL,** resident mgr. at St. Regis Paper Co.'s Bucksport, Me. mill, recently married Mrs. Lois Craven Frick of Kalamazoo at the Little Church Around the Corner. . . Retired resident mgr. of Bucksport, **GEORGE D. BEARCE,** also was married in New York recently. Scene was the Fifth Avenue Presbyterian Chapel, followed by a honeymoon in Bermuda. . .

At Oxford Paper Co., Rumford, Maine, **LORING W. McFAIL** is now staff associate for paper development with the research dept. and **RICHARD J. QUINT** is now group leader for plain paper and graphic arts research. . .

**A. J. DUBUC,** eastern paper mills rep for Turner Halsey Co., agents for Mount Vernon Mills, Inc., has retired. **CHARLES "CHICK" I. HORTON** will take over part of New England and **S. VANSANT** will cover Pennsylvania, New Jersey, Maryland and Delaware. . .

Back to Hammermill . . . **JOHN A. SUSHEREBA** has been appointed junior engineer says **KURT NEUENFELDT,** chief engineer. He's a native of Brookville, Pa. . . Winter vacationists in Florida during some of Erie's rough weather were Dr. and Mrs. **DONALD T. JACKSON** (he's tech director), and Mr. and Mrs. **ROYAL RASCH** (he's head of research). . .

Another Florida vacationer was **DON C. RAWSON,** plant mgr. of Marathon Corp's. Oswego, N. Y. mill. He was enroute home by car when Oswego temperatures were dipping to 30° below, arrived home when it "soared" to 38° above. . . As snow piled up around Watertown, N. Y., **JACK WILBER,** director of technical services for St. Regis, was looking forward with unusual pleasure to a trip to Florida. P. S. He made it. . . .

**S. T. MACKENZIE,** newly elected vice president of Babcock & Wilcox Co., is also in charge of sales of the company's boiler division. . . **HAROLD H. HOLDEN JR.** has joined up as salesman for Eastern Corp., where his father is President **HAROLD H. HOLDEN.** . .

Introducing **JOHN W. HILDEBRANDT,** who joins Fitchburg Paper Co. as an accountant and **ALEXANDER E. HUTTON JR.,** technical control chemist. Latter is grad of American International College, Springfield, Mass., former was with Taylor Fibre Co. and Westfield River Paper Co. . .

**W. H. JENNENS,** who joined Eastman Kodak Co. in 1929 as a chemist in the paper mill, has been promoted to assistant to the manager of paper mfg. **A. R. ANDREW,** succeeds him as supt. of the paper sensitizing division. . . **BERNARD M. HOEY** of Glastonbury, Conn., is now a vice president and director of Case Brothers, Inc., Manchester, Conn. He was formerly sales mgr. for Minnesota Mining

and Mfg. Co. He attended Rutgers U., is a former major in the USAF.

A merger of three leaders in paper converting—McLaurin-Jones Co.; Angier Corp. and Stocker Mfg. Co.—sees these men as officers of the new company, Ludlow Papers, Inc. Needham Heights, Mass.: **HENRY M. BLISS,** president; **ALBERT J. THIEL,** exec. vice pres.; **FRED STOCKER,** director of coordination; **ROBERT J. METZLER,** vice pres i/c sales; **JACK HOLLAND,** i/c manufacturing; and **JOSEPH C. MAHONEY,** treasurer.

**WARREN M. SLOCUM,** assistant manager of sales, New York & Pennsylvania Co., has retired after 44 years service. . . New assistant chief chemist of Bird & Son, Inc. at East Walpole, Mass. is **CARROLL A. HOMAN. . . GEORGE E. HUBER,** formerly of Keyes Fibre Co., is now project engineer at Battelle Memorial Institute, Columbus, O. . .

At Diamond Match Co's. Ogdensburg, N. Y. mill, **JOHN F. JAHNE,** formerly of St. Lawrence Paper Co., is now chief chemist. . . **ALEXANDER S. KASSER,** who used to be with Parson & Whittemore, Inc., is now president of Technopulp, Inc. at Montclair, N. J. . .

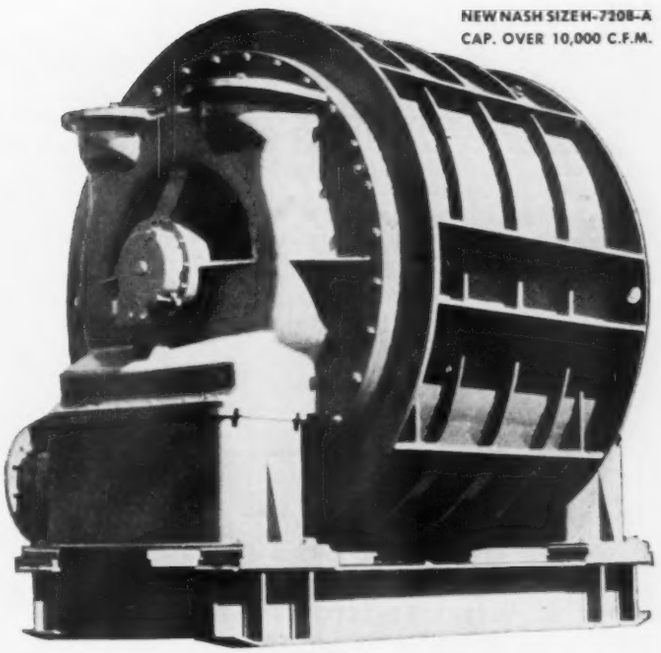
**J. R. ATWATER,** formerly with the Mead Corp., is now assistant to the president, P. H. Glatfelter Co. During World War II, he represented the pulp and paper industry with the OPA. . . Setting up new offices for The Bauer Bros. Co. at 100 Chestnut St., Springfield, Mass., (and also getting a nice promotion at the same time), is **LEROY J. BAUER,** who moves up from sales engineer.

**RICHARD L. BLANCHARD** has joined Brown Co. at Berlin, N. H., as paper chemist with the research and development dept. He has a b.s. in chemistry from Bates College. **WILLIAM S. HUTCHINS,** a grad of Yale U, comes to Brown as time study analyst with industrial engineering. . .

Manager of new Manufacturing Services Dept. for West Virginia Pulp and Paper Co. is **NICHOLAS SHOUMATOFF,** former management engineer on Exec Vice Pres. **JOHN D. COWAN's** staff, with West Virginia 15 years. He holds a business and engineering administration degree from M.I.T. and a master's in mechanical engineering. Nucleus of Mr. Shoumatoff's staff will be **ARTHUR CHRISTGAU** and **JOHN DAVID BYRN** as manufacturing services engineers. Former is M.I.T. grad in ch.e., joined Westvaco's N.Y. engineering dept. in 1941 as staff engineer. Latter is a Lehigh U. grad in ch.e.

## Far West Flashes

**CARL FAHLSTROM,** assistant resident mgr., Longview Fibre Co., and his wife, Peg, have been winter vacationing


**If three days lost production on a paper machine amounts to more than the cost of Vacuum Pumps, dependability is the prime factor in pump selection.**

Over a thousand leading mills depend on Nash Vacuum Pumps to insure continuous production. Nash Pumps are built sturdy enough to stand the pounding of continuous production. They are simple. They have no internal parts in wearing contact. They will handle slugs of water or stock. They are designed to operate at the low speeds necessary for long life and reliability. Don't gamble with your production. Install Nash Vacuum Pumps and be safe.

**NASH ENGINEERING COMPANY**
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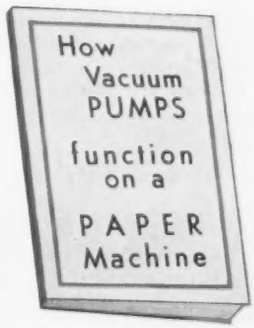



Of equal interest to Management and to Machine Operators is this informative booklet just published. A copy will be mailed to you free upon request.

Name_____

Address_____

City_____

State_____

in Southern California and Las Vegas, and visiting their daughter, Mary Alice, now Sr. Pius, Franciscan, and teaching 8th grade in Arcadia. Right across from Santa Anita race track, pretty handy for her father if not for her. . . .

**HARRY BUKOWSKY,** who retired recently as resident engineer for Port Townsend, Wash., kraft mill of Crown Zellerbach Corp., a position he held for 24 years, has moved with Mrs. Bukowsky into a new apartment home at Ionne Plaza, 1717 Southwest Park Ave., Apt. 310, Portland, Ore. He is engineering consultant to Crown Zellerbach but is also setting up to do consulting work for other firms, too . . . **MILES MURRAY,** Northwest personnel supervisor for CZ, Portland, Ore., became a grandfather Dec. 18 with birth of a daughter, named Sheila Lynn, to Ruth Murray Seig and Dr. Duane L. Seig of Oakland, Calif. Miles recently attended an American Management Assn. seminar in Los Angeles . . .

**In New Posts in Far West**

ROBERT W. RILEY (left), promoted to paper mill supt. at Crown Zellerbach's West Linn, Ore., mill, succeeding the late Charles E. Ackley. Mr. Riley has been at West Linn several years, lately as senior asst. paper mill supt. He joined the West Linn staff when it went into manufacture of coated book paper after the war, and in the first years was supercalendering supervisor. RALPH D. SIEVERS (right) formerly steam plant maintenance engineer, was promoted to assistant supervisor of steam power maintenance at Crown Z Camas, Wash., mill.

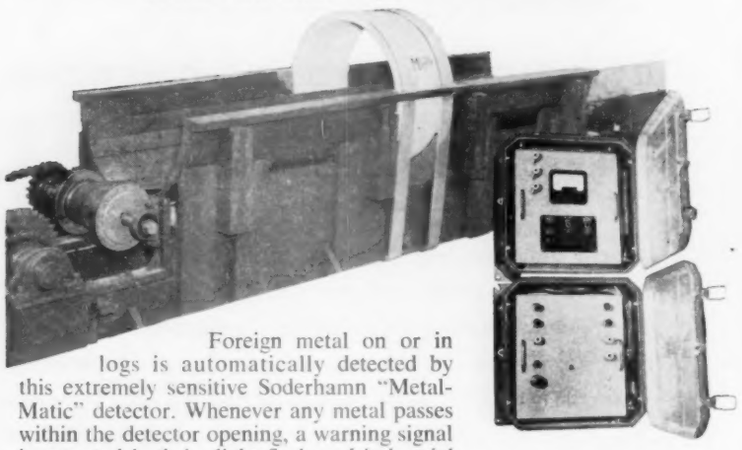
**JAMES DURGAN** has joined the St. Regis public relations department and is based at Tacoma, Wash., for its western operations. He has been publicity director of the Washington State Advertising Commission, directed publicity for a north western theater chain and worked for an eastern Washington newspaper . . .

Res. Mgr. **MALCOLM J. OTIS** and Personnel Supervisor **DON OSBORNE,** both of CZ West Linn operations, "starred" recently on NBC-TV when Dave Garroway's Wide, Wide World featured this Crown Z plant . . . **ROBERT W. TAYLOR,** formerly on the public relations staff of Standard Oil Co. of Calif., joined Crown Z Headquarters as public relations assistant . . . **LYALL BURNETT,** engineering supervisor at CZ Camas, retired first of the year after 46 years service . . .

Promotions in Longview Fibre Co.: **ARTHUR S. PARSON,** former assistant supt. to bag plant supt., Longview mill, succeeding **M. VANCE ROLEY,** who took early retirement after 26 years in this position; **GEORGE M. CAPLOE,** former scheduler at Longfibre's Oakland plant, to Longview as office manager, container division; **R. E. WERTHEIMER,** package engineer at Los Angeles plant, to chip buyer at Longview . . .

**GEORGE H. WEYERHAEUSER,** who joined Pulp Division of Weyerhaeuser Timber Co. at Longview in 1949 and since Jan. 1954 has been manager of Springfield lumber division, became assistant to Exec. Vice Pres.-Gen. Mgr. **CHARLES H. INGRAM** in Tacoma . . . **BEN HAGEN,** assistant manager-production planning, Western-Waxide at San Leandro, Calif., promoted to manager of production planning . . . **THOMAS E.**

Our new METAL MATIC METAL DETECTOR eliminates metal damage to saws and knives



Foreign metal on or in logs is automatically detected by this extremely sensitive Soderhamn "Metal-Matic" detector. Whenever any metal passes within the detector opening, a warning signal is actuated both by light flash and industrial horn or bell. Available accessory equipment can be used also to halt the conveyor system or have the log marked with dye, so it can be subsequently discharged from the conveyor.

The "Metal-Matic" is simple to install. It has a rugged self-contained detector unit, completely enclosed and protected from dirt and moisture. All controls and electronic mechanisms are in a sturdy, cast aluminum box which may be placed within the mill some distance from the unit. Simple remote controls can be easily adjusted daily for degree of sensitivity.

Operation of the "Metal-Matic" is dependent to a large extent on its installation. It is therefore important that one of our sales engineers inspect the site to determine its appropriate position. On receipt of order, necessary conveyor and installation drawings are furnished to assure trouble-free operation. Maintenance cost on control unit is guaranteed for 3 years, not to exceed $50.00 per annum.

For information on this new machine, phone or write.

SODERHAMN MACHINE MANUFACTURING CO.
SODERHAMN, SWEDEN SINCE 1864 TALLADEGA, ALABAMA

*West Coast Sales Office: Room 409 Pittock Building, Portland, Oregon*
*Canadian Representatives, East Coast: Forano Limited, Montreal, Canada*

**Promotions at Publishers' Paper**

JAMES A. WILSON (left), asst. mill mgr. since 1933 of Publishers' Paper Co., and its predecessor company, Hawley Pulp & Paper Co., Oregon City, Ore., has been promoted to mill mgr. He succeeds Carl E. Braun, who has retired. Mr. Wilson continues as secretary of Publishers', a position he has held since 1950. FRED J. WELEBER (right), has been promoted from chief chemist to asst. mill mgr. Clifford Mayer succeeded him as chief chemist. Vice Pres.-Gen. Mgr. Sam Robinson announced the appointments.

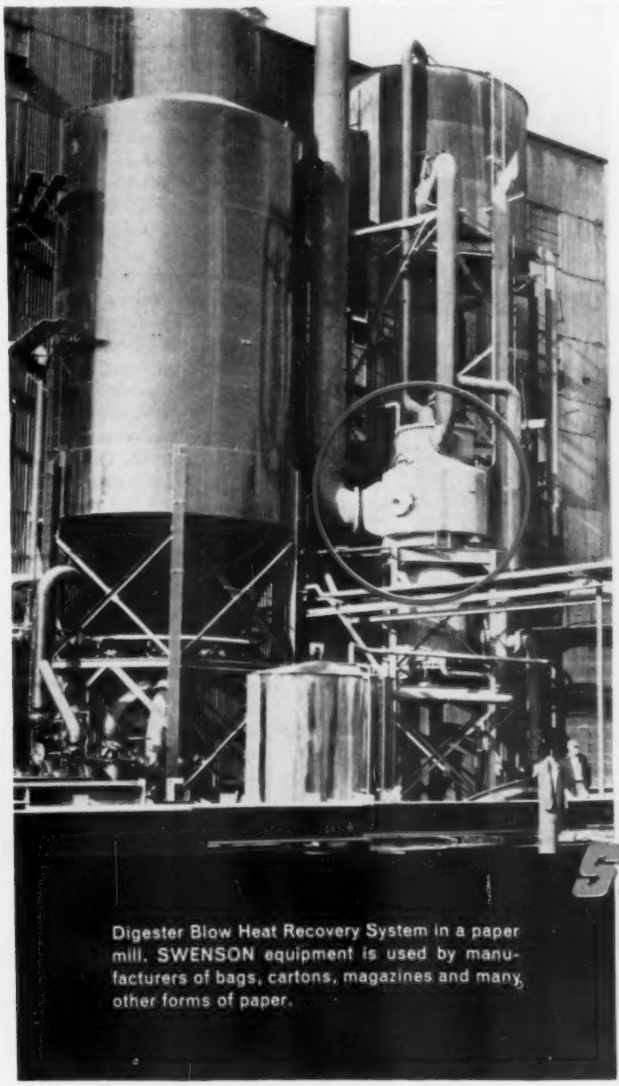
**BENNETT,** former paper technician, becomes converting plant inspector, CZ Camas technical department . . .

**MELVIN L. WINGROVE,** coming from Wisconsin with long experience in manufacturing tissue papers, joins CZ Camas mill as assistant to the paper mill supt . . . **LEO NEWTON,** former junior assistant paper mill supt. has been promoted to senior assistant paper mill supt. at CZ West Linn mill; **JOHN DENHOLME,** machine room supt. at CZ's Ocean Falls mill, was named junior assistant paper mill superintendent at CZ West Linn. . . .

**J. D. ZELLERBACH,** formerly president of Crown Z and recently appointed U. S. Ambassador to Italy, took up his new duties in mid-January. He and Mrs. Zellerbach reside at Villa Taverna, a 4-story 17th century Roman structure. . . .

**LENNIE GLOTH,** asst. purchasing agent, Weyerhaeuser Timber Co.'s Springfield, Ore. branch, was elected president of local golf club . . . **OTTO M. MILLER** becomes plant mgr. at Continental Can Co., Gair Div. converting plant at Los Angeles, Calif. . . . **JAMES LEEDS,** new tech. supt. of Paper Mill, Grays Harbor Div. of Rayonier, Inc., Hoquiam, Wash., visited the Hammermill Paper Co. recently to familiarize himself with operations, products and personnel.

Crown Z, in accordance with program to place capable executives in important managerial positions, thus provide senior officers with greater opportunity to concentrate on general management, named **GEORGE S. RUNYAN,** since 1953 mgr. of distribution sales div., v.p. for general paper sales; **DAVID J. BENJAMIN,** former div. mgr. of Western-Waxide, v.p. in charge of Western-Waxide's specialty packaging div.; **EDWARD P. PARTLAND** from mgr. industrial sales div. to asst. v.p. for general paper sales; **WIL-**

Digester Blow Heat Recovery System in a paper mill. SWENSON equipment is used by manufacturers of bags, cartons, magazines and many other forms of paper.

Hot Water Produced at Lower Cost!

High temperature water for pulp mill operation can be produced at lower cost with the SWENSON digester blow heat recovery system. The use of a surface type condenser provides clean hot water through the recovery of heat from the vapor released when blowing digesters. A centrifugal separator integral with the surface condenser removes liquor and pulp entrained in the blow vapor.

The SWENSON heat recovery system is designed on a digester basis – thus modifications are not required in future mill expansions with the same digester conditions. Automatic operation synchronized with the blowing cycle provides hot water at constant flow and temperature.

Send for full details on the SWENSON digester blow heat recovery system!

*SWENSON EVAPORATOR COMPANY*
*15632 Lathrop Avenue, Harvey, Illinois*

SWENSON
A Division of WHITING Corporation

Proved Engineering for the Process Industries
Since 1889

# STRICTLY PERSONAL

**LIAM J. ZELLERBACH,** from director of marketing services to asst. v.p. for marketing services; **PHILIP S. EHRLICH JR.,** who joined Crown in 1955, becomes asst. secy. and, as such, will head company's legal dept.

## Column from Canada

**A. C. McGOUGAN,** manager, pulp sales, for MacMillan & Bloedel, Vancouver, B.C., spent several weeks of January and February in the Orient, making calls on pulp buyers in Japan, Hongkong, the Philippines and Korea . . .

New chairman of the executive committee, western division, Canadian Pulp and Paper Assn., is **B. M. HOFFMEISTER,** chairman of the board, MacMillan & Bloedel, Vancouver, B.C. Other members are **W. E. BREITENBACH,** exec. vice pres., Alaska Pine & Cellulose; **L. L. G. BENTLEY,** vice pres., Canadian Forest Products; **J. A. CRAIG,** pres., Sidney Roofing & Paper Co.; **E. M. HERB,** pres., Westminster Paper Co.; **M. J. FOLEY,** pres., Powell River Co.; **J. S. JOHANNSON,** gen. mgr. association relations, MacMillan & Bloedel; **H. G. MUNRO,** pres., B.C. Forest Products; **R. J. SCHADT,** vice pres. in charge of manufacture, Elk Falls Co., and **R. H. YOUNG,** former chairman of the division and exec. v.p., CZ Canada. . . .

**FRED S. SEABORNE** . . . picture taken on visit to LongLac (KC) mill at Terrace Bay, Ont.

**WILLIAM McMAHAN,** vice pres., Canadian Forest Products, whose semi-bleached sulfate mill is at Port Mellon, B.C., has been elected president of the Lions, Vancouver's professional football club that has been fabulously successful financially. He played football himself while at Univ. of Washington . . .

**WALTER T. ANDRUSCO,** former night supervisor of finishing and shipping at the Fort Frances, Ont., mill of Ontario-Minnesota Paper Co., has been promoted to finishing room supervisor to succeed **JOHN FOSTER,** who died recently. **WALTER E. DUCHNICKI,** formerly finishing room department tour foreman, has taken over Mr. Andrusco's former job. Polish-born Walter Andrusco has been with Mando at Fort Frances for 21 years. He is choirmaster of St. George's church and bandmaster of the civic band. . . .

## Seaborne Heads K-C in Canada

FRED S. SEABORNE is newly elected executive vice-president and director of all Kimberly-Clark operations in Canada, announces John R. Kimberly, president and chairman of the board. The action will integrate all Canadian K-C Mills and woodlands operations under one central headquarters in Toronto.

Mr. Seaborne, brother of Exec. Vice Pres. Charles Seaborne of Thilmany P&P, has been with Kimberly-Clark since 1923. In returning to Canada, he will continue as a corporation vice president and director.

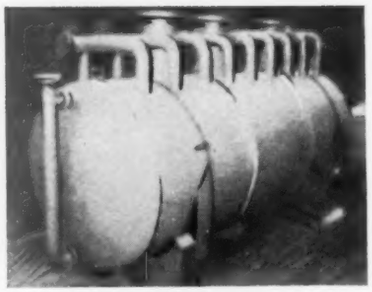
## Hagan for Merrick in B.C.

Hagan Corp. (Canada) Ltd., 539 East Hastings St. Vancouver 4, is new representative for Merrick Scale Mfg. Co. in British Columbia, replacing Irving R. Gard, who recently died.


*Best results require...*

**COMPLETE**

**stock deaeration**



It is not sufficient in stock deaeration to remove only the *visible* air bubbles and foam. For best results it is necessary to remove the microscopic air bubbles which are found attached to the individual stock fibres.

Only the Deculator process provides such complete deaeration. When the microscopic air bubbles are removed, stock drainage rates increase, sheet formation improves, and essential paper tests are better.

Users of the Deculator process profit from its operation through savings in anti-foam agents, increased production, and control of quality.

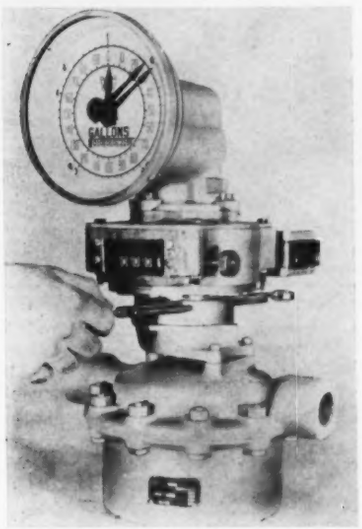
Write for more information about the advantages of *complete* stock deaeration.

CCV

**CLARK & VICARIO CORPORATION**

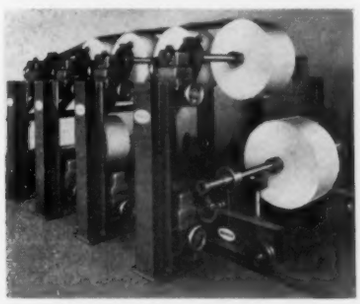
NORTH TARRYTOWN, NEW YORK

# NEW EQUIPMENT and SUPPLIES



## Add Speed to Liquid Metering

A new explosion-proof control system provides for automatic switch control of all pumps and quantity control valves right at the meter. Upon completion of a predetermined liquid delivery, a switch is automatically thrown, opening an electrical circuit and cutting off simultaneously all liquid flow at the meter and all pumping action. The system includes a new accessory control switch, a predetermining register and latch box and quantity control valve—all installed at the meter. Details are described in Bulletin OG-327 from Meter and Valve Div., Rockwell Mfg. Co., 400 North Lexington Ave., Pittsburgh 8, Pa.



## Continuous Roll Stand

A new type roll stand, designed for continuous high speed operation and the elimination of cutter down-time for roll loading has been developed by Charles R. Stevens, Inc., Toledo, Ohio. Features: steady maximum production of cutting machines or any webfed installation without sacrifice of space; can be loaded during run. Write Stevens at 2017 Sylvania Ave., Toledo 13, Ohio.

## New Corrosion Resistant Lining

A new corrosion resistant lining material to protect metal components of chemical process systems has been developed by The Dow Chemical Co., it is announced by D. L. Gibb, sales manager of Dow's plastics dept.

Called Saraloy 898, it is an elastomeric copolymer based on vinylidene chloride. First in a new Dow family of such materials, it is a flexible thermoplastic with extraordinary resistance to a broad range of acids, alkalis, salt solutions and solvents commonly encountered in storage tanks, processing tanks, medium to large diameter pipes and fittings, fume ducts and hoods. It is supplied in 37-in. by 133-in. sheets and from $\frac{1}{16}$-in through $\frac{3}{16}$-in. thicknesses. It can be readily installed in the field or in an applicator's plant by employing a chemically resistant Saraloy 898 adhesive system.

The new product is distributed by Saran Lined Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich.

## Demonstrated to TAPPI

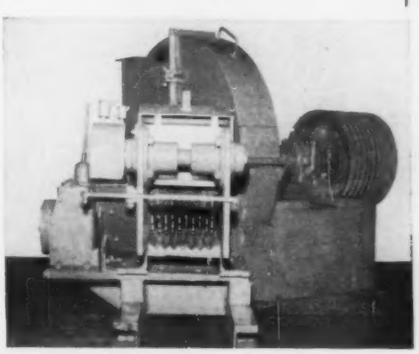
Precision pump component of analyser-recorder, for measuring gaseous emissions of one part per billion (above) was demonstrated by Dr. R. L. Albrook (left), Washington State Institute of Technology, at Pacific Section TAPPI meeting for Moderator Dr. W. G. Meyer, manager of process development, Crown Z Central Research Dept.


**Convert Logs into HIGH-QUALITY CHIPS**

**with Carthage Log Barkers, Log Splitters, Log Chippers, Slab Chippers, Chip Screens**

*For Example:*

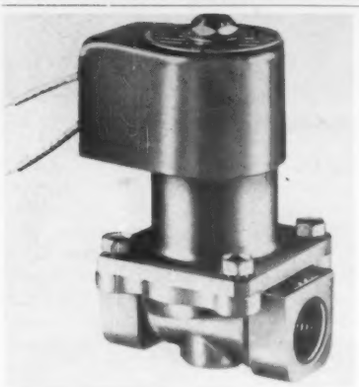
**CARTHAGE SLAB CHIPPER converts slabs, edgings and rounds into top quality chips. Low sawdust except bark. Horizontal feed facilitates handling long pieces. Positive mechanical feed assures uniform, high-quality chips. Heavy-duty construction with all parts accessible for easy maintenance.**



*Write for Complete Information*

**CARTHAGE MACHINE COMPANY** CARTHAGE, NEW YORK

The DRAPER Felt
DRAPER BROTHERS COMPANY
CANTON, MASS.



## New Packless Steam Solenoid Valve

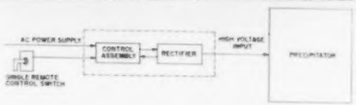
A new steam solenoid valve has been introduced by Automatic Switch Co., Orange, N. J., designers and manufacturers of Asco solenoid valves and electromagnetic control since 1888. The two way valve may be used in a variety of applications for the automatic control of the flow of steam, hot fluids or gases (up to 400°F). The internal pilot operated solenoid valve has a rugged forged brass body and bonnet. Teflon discs are provided assuring tight shut-off without maintenance problems. For details, ask for Bulletin 8222A, Form V5032.

## Plastic Lined Fitting to End Leaks

A paper-thin layer of plastic on a section of the inside wall of a new pipe fitting developed by United States Rubber Co. promises to do away with the problem of leaks at joints in cemented, or solvent-welded, plastic pipe installations. The plastic layer, only a few thousandths of an inch thick, makes the inner half of the fitting slightly smaller than the outside diameter of the pipe it is used to join. But a light coat of solvent base cement on the inside of the fitting, and on the pipe end, softens the plastic layer so the pipe can be pushed snugly into place.

High contact pressure between pipe and fitting causes a positive weld, according to the rubber company's design engineers. The weld is strong enough within seconds for ordinary handling, and in about two hours the solvent-softened plastic in the weld area has completely hardened so the joint is as strong as the pipe itself.

The new fitting, called Uscoweld, also has a flared entrance, leading to the narrow interior section, so pipe can be inserted quickly and easily. This flared opening also aligns the pipe automatically for welding.

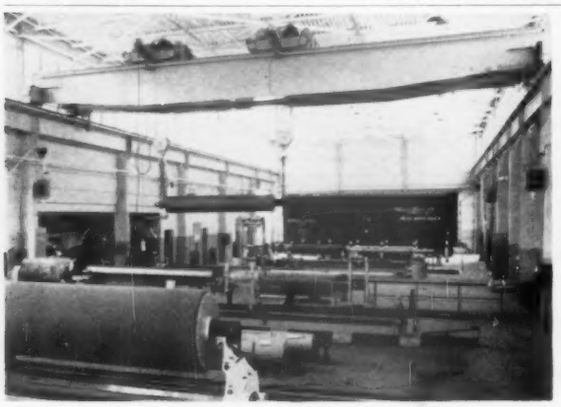



## Electronic System Brings Automation To Precipitators

A new electronic development, recently revealed by Research-Cottrell, Inc., has brought complete automation to the power supplies of electrostatic gas cleaning systems. A complete automatic feedback control replaces the complexities, inefficiencies, and cost of manual adjustment and control of high voltage inputs to their precipitator installations.

This new automation system for electrostatic or electrically powered precipitation equipment eliminates manual and visual electrical controls entirely, replacing them by continuously acting feedback servo-circuits. The precipitator is placed in operation by a single start-stop switch for all rectifiers. These electronic circuits, one for each individual electrical set, continuously maintain rectifier power output at the optimum level necessary for highest precipitator performance.

Fundamentally, precipitators should be operated at the highest possible voltages and power inputs, which in general are limited by sparkover between the precipitator electrodes. It



*Simplify Paper Roll Handling Problems with* **EUCLID CRANES**

Paper Mill Cranes are a specialty of ours. We've helped build our reputation through close cooperation with production supervisors and engineers in the paper industry.

Shown here is a 30 ton, 5 motor, double box girder Euclid crane in operation at a large southern roll reconditioning plant.

It is floor controlled for convenient operation and incorporates two independently operated trolleys. We'll be glad to discuss your crane or hoist requirements with you.

*for details write* **THE EUCLID CRANE & HOIST CO.**
1363 CHARDON ROAD • CLEVELAND 17, OHIO

has been found that best performance occurs at voltages well above the threshold value for sparkover, in many cases at 50 to 100 sparks per minute. Operation under these conditions requires circuits designed for rapid recovery of precipitator voltage following sparkover.

The new control system functions by continuously monitoring and readjusting spark rate to maintain optimum voltage and power input. The optimum voltage and power input will vary with changing precipitator conditions, such as the temperature, flow rate, composition, and humidity of the gas being treated, and size and resistivity of the particles being removed. Previously, adjustment of each electrical set in a precipitator installation was made manually by an operator at a control panel. This required, for maximum efficiency, an expert operator controlling a multitude of knobs, meters, and panels.

The block diagram above indicates how the CA system operates. A simple switch starts and stops operation of the automation circuits in the electrical control assembly. This assembly is the heart of the CA system, instantaneously adjusting and maintaining high voltage output of each rectifier at a preset point of optimum performance, regardless of changing process or precipitator conditions. This is done by a continuously operating feedback loop that compares actual current, voltage, and sparking conditions in the precipitator with ideal, preset reference levels determined by experimentation with both precipitator and process.

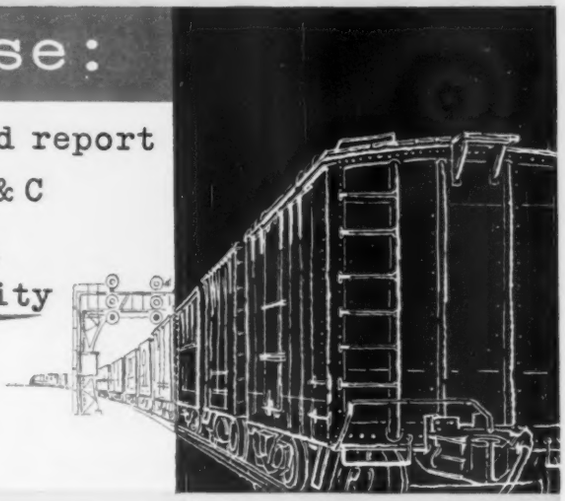
## New System of Cable Supports

Shown above is a new design of cable trough by T. J. Cope Inc., 3rd and Walnut Sts., Collegeville, Pa. Jersey Central Power & Light Co. has adopted this Cope cable trough as the standard power and control cable supporting system for expanded facilities at South Amboy, N.J. One new 62,500 kw generator was added and two


MIN CHEMISTRY *at work*

case:

Condensed report on how M & C controls the quality of paper clays



An established system of watchfulness precedes the departure of every car of paper clay from an M & C plant. This permits papermakers' own quality control to extend all the way back through five M & C operations.

(1) *Appraised* Prospecting—to establish absolute fitness of clay deposit for use in paper

(2) *Controlled* Mining—amplified by crude clay selection, blending and testing to insure uniformity of brightness, viscosity, etc.

(3) *Regulated* Fractionation—scientifically carried out for maximum clay improvement

(4) *Controlled* Filtration and Drying—to round out the most rigid of processing sequences

(5) *Standard* "Guard Duty"—no car of Edgar-M & C paper clay rolls until the laboratory tests and okays finished product specifications. Each bag is a machine-weighed, scale-checked unit . . . each car approved for damage-free transit.

Our business is to supply paper clays that are *process-engineered* to make things go smooth in your mill . . . good in your markets. Use the coupon.

MINERALS & CHEMICALS CORPORATION OF AMERICA
295 Essex Turnpike, Menlo Park, N. J.

I'm interested in a paper clay product for_____

Send: ☐ Detailed literature ☐ Free samples

name_____ title_____

company_____

address_____

city_____ zone____ state_____

MINERALS & CHEMICALS
CORPORATION OF AMERICA
295 Essex Turnpike, Menlo Park, N.J.

*Leaders in creative use of non-metallic minerals*
ATTAPULGITE (*Attapulgus*)
ACTIVATED BAUXITE (*Porocel*)
KAOLIN (*Edgar • ASPs*)
LIMESTONE (*Chemstone*)
SPEEDI-DRI FLOOR ABSORBENTS

**Only .0006 minutes down time per ton!**

## *A plant engineer proves that* WARREN Stock Pumps *slash maintenance costs*

Here are the figures that proved to the plant engineer of a large eastern paper mill* that Warren Stock Pumps stand up longer with less maintenance:

**116 minutes down time / 190,000 tons of stock = only .0006 minutes down time per ton!**

These figures were compiled over a period of several years, during which the pumps operated continuously – 24 hours a day, 7 days a week. Under the same severe conditions, non-Warren pumps handling the same services required much more down time attention.

By actual figures, this plant engineer verified his confidence in selecting Warren Pumps for the vital job of transferring paper stock at all consistencies – with a very minimum loss in maintenance time.

Work stoppages due to pump failure cut production, jump costs. Discuss your problem now, with a Warren Pump specialist.

*Cascade Plant, Brown Company, Berlin, N. H.

WARREN

**Use the coupon below for quick and helpful information on Warren performance-tested stock pumps.**

PP-39

**WARREN PUMPS, INC., Warren, Massachusetts**

**Gentlemen:**

**Please send me free Stock Pump bulletins No. 234, No. 235 and No. 243. I understand they will help me select the pump best suited for my requirements.**

Name and Title _____

Company _____

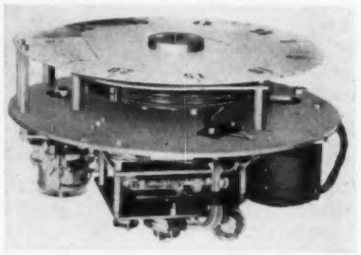
Address _____

City _____ Zone ____ State _____

☐ PLEASE HAVE YOUR REPRESENTATIVE CALL.

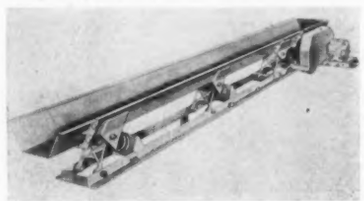

original generators were increased from 25,000 to 27,500 kw each.

All cables for the original installation were supported in conduit, those for the new capacity are supported in trough. Yet the cable trough occupies far less space, permits higher cable current capacity, and saves substantially in cost of material and installation time, says Supt. John E. Casey.



### New Servo-Mechanism

A new self-balancing electronic potentiometer servo-mechanism has recently been made available by The Bristol Co. The Dynamaster servo-mechanism is furnished without a case, and is designed to be built into a user's equipment. It consists of a group of standard Dynamaster instrument parts assembled on a circular base, and fitted with an indicating scale. When used with a Bristol amplifier, input transformer, and Syncroverter d-c a-c inverter, it forms a complete self-balancing dial indicator. Details are available in bulletin P1245A, from The Bristol Co., Waterbury 20, Conn.



### Oscillating Conveyor For Bulk Materials

New design in oscillating conveyors —Coilmount—is Link-Belt's most recent addition to its oscillating conveyor line for bulk materials handling. Coilmount, shown above, is especially engineered for applications in the intermediate ranges and capacities to augment and complement the light and heavy ranges of time-proven Flexmount and Torqmount conveyors for bulk materials handling.

Application histories of Link-Belt oscillating conveyors range from bottles to cake mixes; from metallic concentrates at 0% moisture to streptomycin wastes at 85% moisture; from chips and turnings at room temperatures to sinter at 500° F., and higher (with special trough construction).

# LITERATURE

## Film on Stock Valves

A new film entitled "Pulp Stock Valves" has been produced by Crane Co. The 16mm black and white sound movie has a running time of about 12 minutes. The film portrays some of the fluid handling problems in the pulp and paper industry, particularly those of stock of varying consistency and corrosiveness. How Crane has solved this problem is shown by discussing the features of each part of a disassembled Crane pulp stock valve as the valve is being reassembled. The wide range of available materials and operating mechanisms are shown. Prints of the film are available free through Crane branches or Modern Talking Picture Service, Inc., 216 East Superior St., Chicago 11, Ill.

## Describes Heat Recovery Systems

A new, illustrated booklet, "Digester Heat Recovery for Pulp and Paper Mills" tells of the advantages of direct contact condensers and indirect surface condensers for heat recovery from batch digesters and continuous digester systems. Illustrated are typical batch and continuous digester systems. For a free copy write Swenson Evaporator Co., Harvey, Ill., and request Booklet SW-301.

## Catalog for Sandy Hill

Its complete line of pulp and papermaking machinery is being featured in a new catalog by Sandy Hill Iron and Brass Works. The first of six sections is now off the press and features a blueprint of a typical modern complete Fourdrinier type machine, showing schematic drawings of five conventional combinations of usual Fourdrinier paper machine elements. A section is devoted to the New Ideal Fourdrinier, featuring nonremovable Fourdrinier assembled from standard units.

## Horizontal Pressure Filters

Cochrane Publication No. 6322 describes horizontal pressure filters with information on operation, control, filter bed materials, design features, available accessories. For your copy write to Cochrane Corp. at 17th St. below Allegheny Ave., Philadelphia 32, Pa.

## Price List

Bulkley Dunton & Co., Inc., 295 Madison Ave., New York, has published a new 1957 price list and catalog, consisting of 176 pages, to meet the need of paper buyers. It was produced using three printing processes—silk screen, letterpress and offset lithography. Copies are available upon request.


**Specify Protective Coatings With a Slide Rule!**

***Use Carboline's Engineering Approach!***

When an engineer wants an accurate calculation, he doesn't guess – he uses his slide rule.

When you buy or specify protective coatings, don't *guess* about the system that is best for your needs. Follow the engineer's example, and use a "slide rule" – a careful, point-by-point comparison of the facts on these important features:

- SOLIDS CONTENTS
- COVERAGE PER GALLON
- MIL FEET PER GALLON
- MIL THICKNESS PER COAT
- RESISTANCE TO CORROSIVE
- ESTIMATED RECOATING CYCLES
- **COST PER SQUARE FOOT PER YEAR OF SERVICE**

**FREE** — a 12" x 18" comparative data chart . . . your "slide rule" for judging protective coating systems . . . permitting quick, accurate evaluation of systems on the basis of cost per square foot per year of service. Write for your free copy today.

Carboline data sheets and recommendations give you all the facts necessary to arrive at a sound, clear-cut conclusion. You will find, on all of these basic points, Carboline Coatings score high. Many Carboline users have discovered the true effectiveness and long range economy of Carboline Coatings by this scientific comparison approach.

Sales Offices in Boston, New York, Pittsburgh, Detroit, Chicago, Houston, Denver, Los Angeles, San Francisco, Toronto and other leading cities.

**carboline COMPANY**

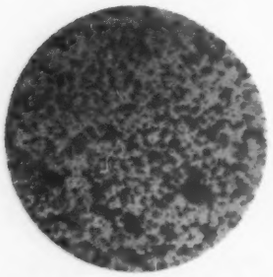
349 Thornton Ave., St. Louis 19, Mo.

Manufacturers of PHENOLINE, POLYCLAD, RUSTBOND PRIMERS

*Specialists in Corrosion Resisting Coatings and Linings*

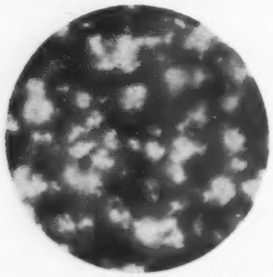
# HOW SUBOX PAINTS ACTIVELY COMBAT CORROSION

Subox paints go far beyond the passive protection of inert paints. The chemically-active suboxide of lead in Subox paints actually works continuously to combat corrosion, as illustrated by these photomicrographs:



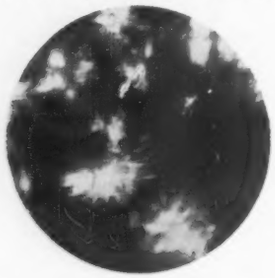
LEAD-SUBOXIDE PARTICLES

Lead-suboxide is a colloidal pigment which assures maximum penetration of a surface . . . packs to form a dense, impervious film. Two coats of Subox usually give the coverage of three of other paints . . . often, one coat of Subox is enough.



FIELD OF LEAD SOAPS

As soon as Subox is dry, lead-suboxide begins to react with the fatty acids of the vehicle to form insoluble lead soaps whose fibers bear metallic lead. These fibers intertwine to continuously build up a reinforcing film of protection.



FIBROUS STRUCTURE OF LEAD SOAPS

The fibrous film gradually strengthens and replaces the original vehicle film which otherwise would have become brittle and have largely lost its protective power and adhesion.

Subox paints are the only American paints made with lead-suboxide. They are economical to apply, endure for years and largely eliminate the need for scraping and repriming when repainting is required.

Write for the brochure "Subox Paints".

SUBOX PAINTS

Subox Inc.

*Established 1924*
8 Fairmount Plant
Hackensack, N. J.


## TAPPI Papers

Continued from page 70

Co.: New technique for measuring strength improvements by separating overall effect of chemical additives in three parts: 1—Power substitute value or those effects which can be produced by refining. 2—Fiber substitution value or those effects which can also be produced by increase in basis weight or by use of stronger pulp furnish. 3—Property disproportionation value or those effects which are unique for sheets made with internal additives. This technique was devised to estimate value of strength-producing additives, is equally satisfactory for comparison of different pulps or on different pieces of refining equipment. Quantitative comparison can be made on power requirements, inherent strength of pulps.

**Use of Kraft Knots and Screen Room Rejects in Semi-Bleached Sulfate Pulp** by J. K. Dyer and J. N. Swartz, Bowaters Southern Paper Corp: By using proper screen room and bleaching techniques, kraft knots and rejects have been successfully refined and bleached without being recooked. Solution: refine pre-knotter rejects to size of screen room rejects and handle both in same manner. Important phases: 1—Pre-knotters should not be ground too finely or they will be accepted by primary screen without necessary secondary refining. 2—Adequate secondary screen capacity is needed so clear separation can be made between pulp and uncooked portion of primary screen rejects. 3—Centrifugal screening of secondary accepted stock is required to keep dirt count within reasonable limits. 4—External mixing of chlorine and pulp is desirable to reduce shive count in finished pulp. Results: Dirt count controlled within reasonable limits of 20 to 40. Strength properties of pulp remained unchanged for practical purposes.

**A New Polyacrylamide Type Flocculant for Improved Filler Retention** by J. F. Reynolds and R. F. Ryan, Dow Chemical Co. A new non-ionic high molecular weight acrylamide-type polymer has been developed to aid filler retention on wire during sheet formation. Use has resulted in considerable monetary savings plus operating advantages gained by less pigment recycle.

For optimum filler retention a closed white water system is desirable. Data submitted from mills indicate increased retention rising from 50% to 60% to 80% to 90%.

**Piccopale Resin Emulsions as Internal Sizing Agents for Paper** by J. J. Becher, E. F. Thode, G. R. Hoffman and J. W. Swanson, Institute of Paper Chemistry. Piccopale is a hydrocarbon resin produced by polymerization of unsaturated products from the deep cracking of petroleum. Handsheet studies with Piccopale resin

emulsions were made in sulfite furnish. Results: this resin imparts considerably better water resistance to such paper than does gum rosin size, with less alum demand and with great tolerance for variations in water temperature and purity.

**Brightness Reversion of Zinc Hydrosulfite Bleached Groundwood** by A. A. Yankowski, Kimberly-Clark Corp. Brightness of mixed stock for book paper using zinc hydrosulfite bleached groundwood as one of the components loses brightness across the paper machines. In checking the paper mill system, it was found that reversion took place at the wet end between the proportioners and sheet coming off the wire. High iron concentrations were found in the pulp, water and alum. Investigation of the effect of iron showed change of ferrous ion to ferric ion was causing reversion. Use of versene in bleach stage retarded reversion and later trials reduced reversion by two points.

**A New Type Belt Drive at Work in the Pulp and Paper Industry** by J. Adams, Jr., Raybestos-Manhattan, Inc. Poly-V Drive is a single belt and two or more grooved sheaves with driving capacities ranging up to 1200 hp. Belt traction surface is formed into parallel longitudinal V-shaped ribs and grooves, that mate precisely without clearances with a corresponding ribbed and grooved surface formed on the face of the sheaves.

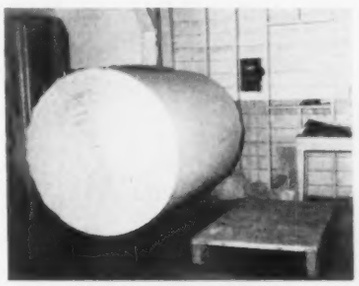
**Mechanical Pulp from Dense Hardwood Chips for Printing Papers.** Considerable interest was shown in the report by Ken L. Snyder and Dick A. Premo of Gould Paper Co. on their new Bauerite process plant. This is the first commercial pulp mill installation to produce high yield mechanical type pulp by the cold soda process from hardwood chips. At Lyons Falls, N. Y., Gould is producing a pulp having strength characteristics equal to or superior to conventionally produced spruce groundwood and it is also being used at levels up to 30% of furnish in substitution for spruce groundwood.

A portion of long fibered pulp has also been replaced experimentally by the new hardwood pulp.

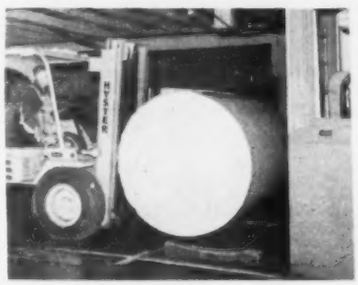
Results: Excellent machine run characteristics in production of printing papers. Strength of cold soda pulp equals that of spruce groundwood at a considerably higher freeness level. This has facilitated drainage on the wire and improved drying. Also improvement in formation and finish has also resulted and better printing quality.

Basically, here's the process: Pressure impregnation of hardwood chips such as birch, beech and maple with 2.5% cold NaOH solution. Digester yield: 90% range. Chemical consumption: 3% to 4% based on wood. Chips pass through a Bauer Pressafiner for liquor extraction and prefiberizing. Stock then moves to two stages


HERE'S HOW CROWN ZELLERBACH LOADS 22 PAPER ROLLS (4000 lbs. ea.) IN 2 HRS. WITH HYSTER ROLL-GRAB



Picking up roll off skid.



Weighing, recording, stenciling.

Rotating roll to vertical while transporting.

Entering boxcar.

Depositing roll on end inside boxcar.

LEBANON, ORE.—Using a rotating Roll-Grab attachment on a Hyster 6000-lb. Lift Truck, this Crown Zellerbach plant is now loading 22 giant 4000-lb. rolls (53" dia., 73" long) into a double-door boxcar in approximately 2 hours.

After picking up the roll and weighing (in a horizontal position) the Roll-Grab rotates the roll to a vertical position as the lift truck carries it into the boxcar, and deposits the rolls on end, two abreast.

Hydraulic power from the lift truck rotates the Roll-Grab and provides the clamping pressure which holds the paper roll safely in any position. The Hyster Lift Truck, mounted on pneumatic tires, easily and safely transports the heaviest rolls (up to 60" dia.) across wooden floors and steel plate decking into rail cars and truck vans. Company engineers state this method has materially speeded the loading cycle.

Your Hyster Dealer makes it his business to keep up with the materials handling progress in pulp and paper mills. Call him today. He will help you reduce your handling costs (perhaps as much as 80%) . . . and these savings go directly into *your* profits!

Call your Hyster Dealer today. He is listed in your telephone directory under "Trucks-Industrial".

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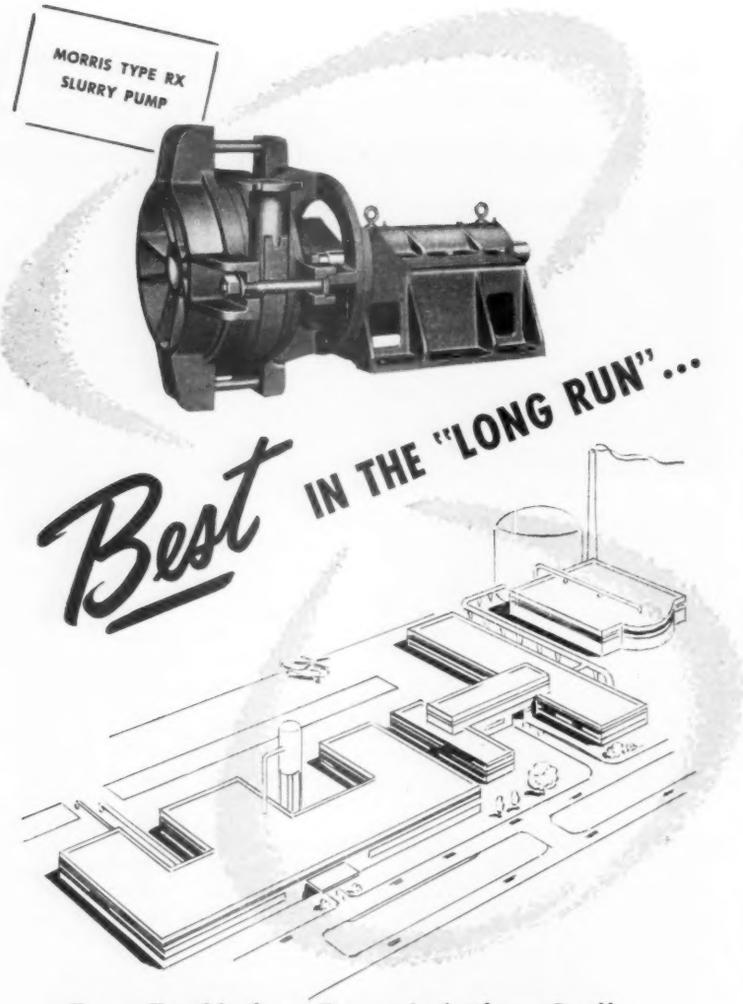


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MORRIS MACHINE WORKS · BALDWINSVILLE, N. Y.


of Bauer double disc refiners, rotary screen and Centri-Cleaners.

After vacuum-washed, pulp is bleached by one stage sodium hydrochlorite from initial G.E. brightness of 40 to 45 to 68 to 70 using 10% available chlorine based on pulp. Finished pulp has average freeness of 150-200 cc. Canadian Standard, burst of 15-22, tear of 50-60, breaking length 3500-4000. Total power requirements for refining are 40-50 hp-days per air-dry ton vs. 65 hp-days per ton for spruce groundwood.

**Double Disc Pulping of Softwood Chips.** Also interesting, on the subject of double-disc refining, was talk by Karl L. Pingrey, resident manager at Diamond Match Co's. Ogdensburg, N. Y. mill. Here a pilot plant study, using commercial size equipment is underway. The pilot plant approach has been made to determine the minimum equipment necessary to produce a pulp having groundwood characteristics suitable for molding pulp operations. Diamond has investigated atmospheric soak and two Bauer refiners in series. Studies have been made of refining chips soaked in hot water, hot caustic solution and in hot sodium sulfite solution as well as the drystage.

Results: Pressure vessels are not needed for pulping of softwood chips. Reasonable success has been had on dry chips. Indications are that there may be advantages in selective screening after the secondary refiner and refining the chips separately rather than introducing them with the chips ahead of the primary refiner. Also, that additional refining equipment after a primary and secondary refiner is necessary to obtain freeness around 150 Canadian Standard.

Studies to date indicate a stronger pulp can be made by using chemicals as a pretreatment and that there is some advantage in a hot water soak over dry chip method.

**Investigation of Variables in Single-Stage Hydrogen Peroxide Bleaching of Cold Soda Pulp** by F. A. Foderaro, F. B. Kenney, C. Raska, L. W. Scott and R. J. Solari, Shell Chemical Corp. Study made to increase versatility of dark pulp produced by the cold soda process because it offers a new means for utilizing the nation's abundant hardwoods.

Brightness gains were superior to those on aspen groundwood pulp, ranged to 18% while chemical and steam costs totaled less than 75¢ per point per ton of moisture-free pulp. Use of high temperature gave advantages of lower reaction time, greater potential brightness and reductions in chemical costs which more than offset the increased steam cost. High temperature bleaching offered best combination of these major economic factors in pulp bleaching.

**The Effect of Chlorine in Chlorine**

**Dioxide Solutions for Bleaching Pulp** by Dr. W. H. Rapson and C. B. Anderson, U. of Toronto. A matter of some concern has been the effect on pulp bleaching that chlorine dioxide solutions prepared by different processes containing different amounts of chlorine might have. Part bleached sulfite and sulfate pulps were treated with chlorine dioxide solutions containing increasing amounts of chlorine. Buffered at pH 6, at which $ClO_2$ does very little damage to cellulose, but chlorine has the maximum degrading effect.

No appreciable drop in viscosity or increase in hot caustic solubility was found with chlorine up to about 25% of the weight of the $ClO_2$, indicating no damage to the cellulose. Viscosity dropped and hot alkali solubility increased as the ratio of chlorine to $ClO_2$ increased above this value, indicating damage to the pulp.

Very small brightness occurred with small amounts of chlorine, and then decreased as the chlorine to $ClO_2$ ratio increased above 25% by weight. After reaching a minimum, brightness increased again.

Since it is unlikely that any commercial chlorine dioxide solution will contain as high a weight ratio as 25%, the effect of any chlorine which may be present may be safely disregarded.

**The Occurrence and Distribution of Defective Sheets of Unsorted Paper as Related to the Installation of a Sampling Scheme in the Finishing Room** by Willard E. Carlson, St. Regis Paper Co., Deferiet. Suggestion: A sampling scheme to supplant the typical sorting room technique because "the handling of paper in sorting can create more defective sheets than removed by sorting." Sampling scheme, to be efficient, requires rolls of paper of the same high quality level to be sheeted together. Depending on the distributions of specific defects in unsorted paper different sampling techniques can be devised to estimate levels of specific defects in rolls and in loads of sheeted paper.

Mr. Carlson, formerly with Whiting-Plover Paper Co., is now in papermaking research for St. Regis, and comments that the finishing room is the most neglected in typical mill operations. Yet, he explains, it costs about 1¢ a lb. to sort paper.

## Buckley Elected Vice President

Raymond J. Lee, president, Lockport Felt Co. of Newfane, N.Y. and Starkville, Miss., announces election of Richard S. Buckley as vice president, in charge of sales and technical service. Mr. Buckley has served Lockport since 1954, and has been director of sales since Sept. 1955.


# PENNSYLVANIA PLANT LOCATION DATA SERVICE

*Special reports and tabulations, tailored to stated location requirements, will be prepared upon request by our engineering and economics staff from central data, files and direct sources, covering:*

LABOR—Availability, skills, rates, surplus areas.

MARKETS—Consumer, industrial product, state, regional.

TRANSPORTATION—Water, rail, truck, air transit time, costs.

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BUILDINGS—Availability, sizes, location, descriptions.

SITES—Acreage, topography, utility services, photos, maps, industrial districts.

MATERIALS—Metals, industrial chemicals, wood, textiles, farm products.

MINERALS—Location, reserves, potentials, analyses.

WATER—Quantitative, qualitative analyses.

POWER—Capacity, network, industrial service, costs.

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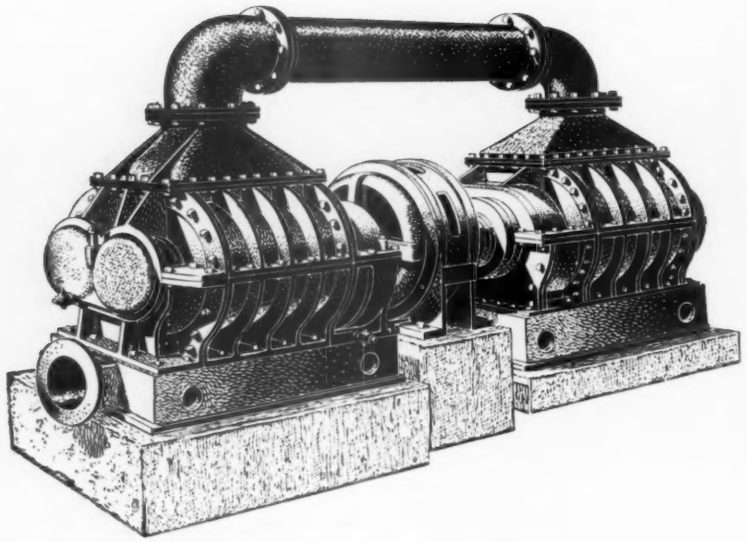

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- Internal parts readily accessible for inspection without disturbing impeller clearances.
- Compact units require small floor space and less expensive foundations.

R-C vacuum pumps are supplied in single-stage or compound units to meet any capacity requirement. For specification data, write for Bulletin 50-B-13.

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## PULP & PAPER Chemicals Column

**NEW ALUM PLANT IN SOUTH**—General Chemical Div., Allied Chemical & Dye Corp., is building a new plant for production of liquid aluminum sulfate at Port St. Joe, Fla. Output will go primarily for paper manufacture in the area. With this unit, General Chemical will have 24 such plants from coast to coast. Other alum plants in the South are at Jacksonville, Fla.; Macon and Savannah, Ga.; Monroe and New Orleans, La.

**CELLULOSE SPIRITS TO BE RESERVED** . . . The Swedish cellulose industry, upon consultation with the oil companies and the State Trade and Industry Commission, has decided to discontinue the production of alcohol for motor cars. The sulfite effluent alcohol produced by the mills will instead be used as raw material in the organic-chemical industry, which has experienced certain difficulties of late in obtaining alcohol from abroad.

**SODIUM BISULFITE ANHYDROUS** has been raised 50¢ per cwt by Monsanto Chemical Co's. inorganic chemicals division.

**POXYCOTE, A NEW PROTECTIVE COATING,** has been introduced by National Coating Products, Inc. In its formulation Poxycote is said to capitalize on potential resistances inherent in epoxy resins, "miracle" development of the coating field. Applications: protection against corrosive effects of fumes, moisture and drippage of almost all chemicals. Further information and test kits ($5) can be obtained from National Coating Products, Inc., 207 W. 16th St., New York City and in the Midwest through Reismeyer, Inc., 201 S. Central Ave., Clayton, Mo.

**NEW LATEX PLANT** . . . A new plant for commercial production of styrene-butadiene latexes is now in operation at the Western Division, The Dow Chemical Co., Pittsburg, Calif.

A broad range of latexes for coated paper, etc., is to be produced for West Coast users, according to R. L. Curtis, vice president and general manager of the division. Demand for the synthetic latexes has been steadily increasing.

Dow has three other latex plants at Midland, Mich., Velasco, Tex., and Sarnia, Ont.

### Diversification is Key

"With lumber operations hampered by tight credit, overseas competition, high freight rates and mounting costs, expansion into the fields of pulp and paper production is the logical development for forest industries. Diversification is the key to economic success."—**REED O. HUNT,** exec. vice pres., Crown Zellerbach Corp., while touring operations in British Columbia.

### LONG RANGE OUTLOOK

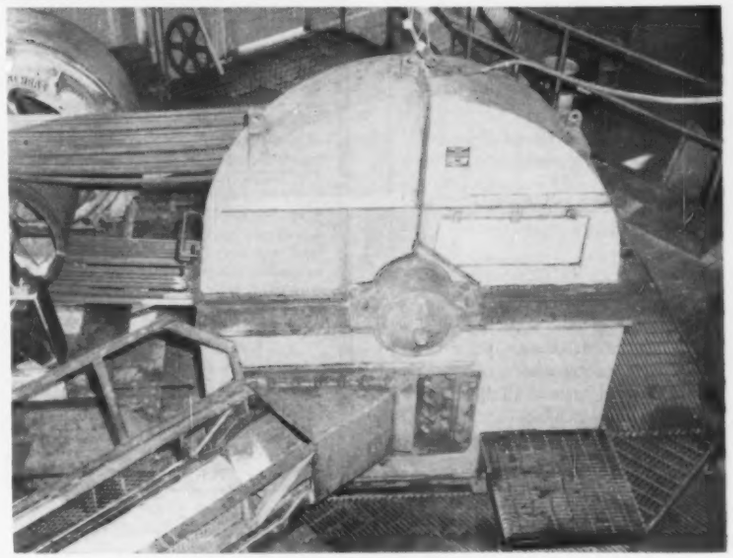
"The long-range outlook for paper and other forest products is excellent, with reliable estimates that paper and plywood production must virtually double over the next 20 years to keep pace with mounting consumer demands. Within this favorable context, Crown Zellerbach's present expansion program is selectively oriented toward those product lines and market areas with the greatest immediate promise. Consequently, we are directing our growth into such fields as multiwall shipping bags, printing papers, household paper products and specialty packaging papers—and timing any further expansion in other fields such as general kraft paper and containerboard as additional demand is generated by population growth and rising per capita consumption." . . . **AL B. LAYTON,** president, Crown Zellerbach Corp.

### Labor and Capital

"Too much emphasis has been placed on the time-worn phrase 'Labor and Capital.' It is the purpose of those who seek to keep these two factors in conflict, to demonstrate to those they are supposed to represent, that there is no community of interest between the two. They try to set up one against the other. This is the greatest disservice these men can render to those they are supposed to look after."—The late **D. C. EVEREST,** former chairman and president of Marathon Corp.

### LONG TERM OUTLOOK

"There is still a feeling of optimism for the long-term demand for papers in our segment of the industry."—**PHILIP H. GLATFELTER,** president, P. H. Glatfelter Co.

This picture shows the Hansel 84" 10-knife horizontal feed chipper at the

**GAYLORD**
**Container Corporation**
**Bogalusa, Louisiana**

used to chip Southern pine and hardwood logs up to 19" in diameter and 5 feet long fed horizontally to the spout at a lineal speed of 265 feet per minute. This chipper is powered by a 400 hp motor and the disc rotates at 475 rpm.

These chippers can be mounted at the mill floor level on a light steel structure and do not require heavy foundations.

When combined with a Hansel hydraulic or mechanical whole log barker, they provide the most economical barking and chipping installation.

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**VENEER CHIPPERS**

- One size to meet all needs
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**Vancouver 10, B.C.**
**EMerald 9913**

## PULP MILL OPENINGS

**British Columbia Forest Products, Limited** has openings at its bleached kraft mill under construction at Crofton, on southern Vancouver Island.

**Mechanical Services Foreman:** Duties will involve supervision of mechanical departments under direction of maintenance superintendent. Must understand all phases of pulp mill maintenance and must have had supervisory experience in a maintenance department.

**Tour Foremen:** Applicants must have had experience in operating or technical supervision in a bleached kraft mill.

*Reply in writing to:*

J. L. Gallagher, Personnel Super.
Pulp Division
British Columbia Forest
Products Limited
Croften, B. C.

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**CYLINDER MACHINE TENDER,** 26 years experience on cylinder machine. Have had 9½ years actual experience running machine. Would like to train for Tour Boss. Preferably a mill in a warm climate. I am 47 years of age and anxious for advancement. Reply to Box 292, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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For consulting firm in the pulp and paper field located in Wisconsin. Applicant must have good foundation in machine design as well as mill experience.

Good personality and ability to organize and plan ahead are important factors. Starting salary $12,000.00 per year with future opportunity to become a member of the firm.

Please write us in confidence giving us a complete resume of your education and experience including recent photograph of yourself. We will then arrange for an interview to be held at your convenience. Box 293, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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Electrical or Mechanical Degree with experience resulting in knowledge of turbo-generators and boilers essential, previous service, test and operating experience desirable, to make studies of steam plant operating data and coordinate studies with Consultants and Operating Personnel.

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High school graduates or better for Structural, Mechanical Equipment and Piping layouts. Minimum three years experience preferably in Pulp and Paper Industry.

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1—G. E. Steam Turbo Generator, 1000 KW, 2300 Volts, non-condensing type, generator and exciter.
1—West. Steam Turbo Generator, 1250 KW, 600 Volts, condensing type, generator and exciter.
1—West. Steam Turbo Generator, 940 KW, 600 Volts, condensing type, generator and exciter.
1—West. Steam Turbo Generator, 50 KW, 125 Volts, generator and exciter.

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**Mill Manager, Thurso Pulp & Paper Company, Thurso, Quebec, Canada.**

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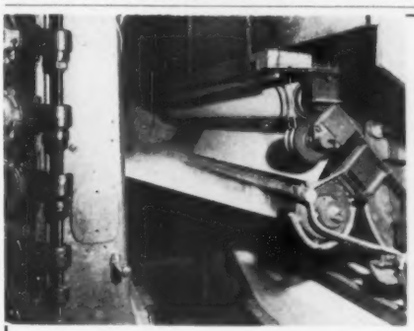

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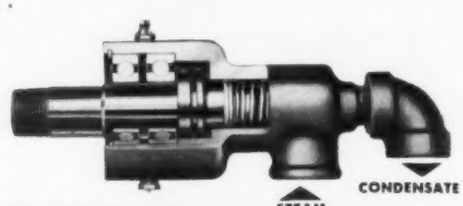


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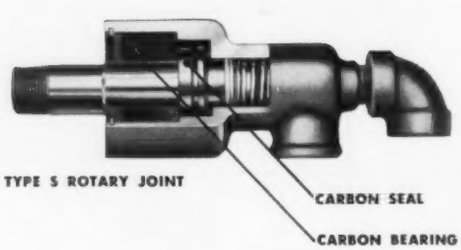


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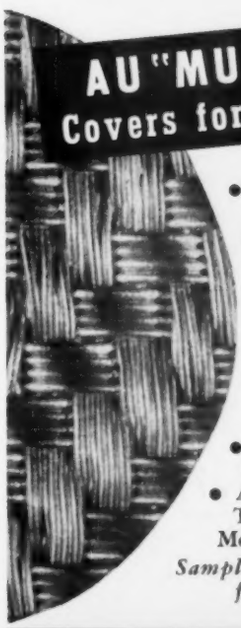

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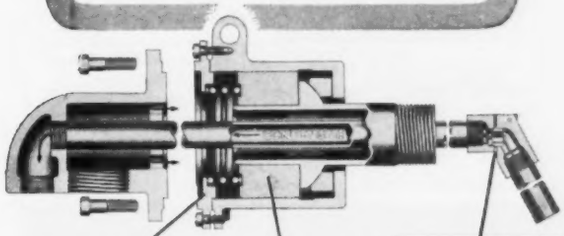

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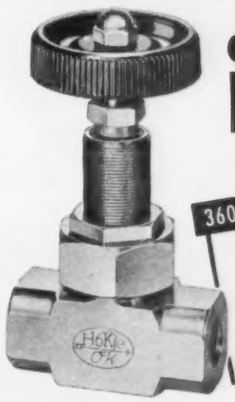

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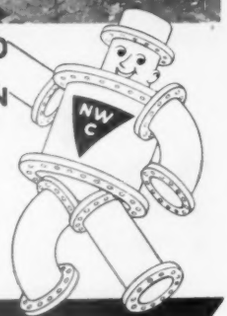


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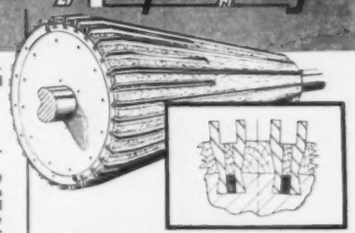

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# The LAST WORD — PULP & PAPER EDITORS' PAGE

## "CLS" Covers Montreal

Charles L. Shaw, who has known a host of top leaders of the Canadian industry during many years as a Canadian newspaper editor, as well as for 13 years with PULP & PAPER, again covered the big wintertime meeting in Montreal for us.

Charley's report is a feature of this issue, as you may already have noticed. Did you note how he drew down from all the private as well as meeting discussions, many major matters of industry-wide interest? Also a run-down of virtually all current Canadian mill projects. You may want to look at his report more closely.

"CLS"

"CLS," who is Canadian director for PULP & PAPER, was born, raised and educated on Canada's Pacific coast. Started working on newspapers at 16 when he was cub reporter on Victoria, B.C., *Colonist*, later becoming city editor. Joined Vancouver *Province* as feature writer, becoming news editor and business editor.

While working on newspapers he started writing about pulp, paper and forest industries. Wrote extensively on Canadian politics and business for magazines, newspapers, press services—Canadian Press, *Time*, *Financial Post*, *Financial Times*, *Maclean's Magazine*, etc.

Contributed to PULP & PAPER soon after its inception, and joined Miller Freeman Publications in 1943 when he was appointed manager of the company's Canadian office.

During the past dozen years 'CLS" has visited every new pulp and paper mill in Canada.

## What Newsprint Price Rise Means to Mills

Several Canadian newsprint producers advanced their prices an average of $4 a ton effective March 1. It was estimated that if all adopted such an increase their annual income would be up $26,800,000, on the assumption that total production is about 6,700,000 tons a year.

The last increase authorized by the industry, amounting to $4 a ton, became effective Jan. 1, 1956, but it was quickly absorbed by higher costs of labor, materials and freight. Meanwhile the premium on the Canadian dollar has been climbing in terms of U.S. currency, and in January this amounted to $5.20 per ton. The fact that the U.S. buys at least 80% of all Canada's newsprint output makes this a heavy additional burden on the Canadian mills.

It is true that profits are high—the highest in history—because hundreds of millions of dollars were spent in the postwar period on modernization, including speedup of existing machines, addition of new ones and construction of new mills.

But profit per ton has been reduced, particularly with the continued upward spiral of costs.

In the past year, here's what has happened at the cost level:

Freight rates increased by 4% in Canada, effective Jan. 1, 1957, and in the U.S. by 7%, Dec. 28, 1956. Those two boosts increased cost per ton by $1.70 to $1.75. In addition, an increase in freight rates last March added 70¢ to 80¢ per ton. This is from Trois Rivieres to New York—a representative rate.

Labor costs increased on an average about 13¢ per hour (5% plus fringe benefits) or some $1.30 per ton last year. Renewed contracts at higher prices for power might cost some mills about 10¢ per ton. Miscellaneous mill expenses, administration and selling prices were perhaps 80¢ to 85¢ per ton higher.

These 1956 increases have meant an additional cost of about $4.50 to $4.70 and more than absorb the increase of $4 per ton in 1956. That was the first increase since 1952 and represented only a 3% increase in price. In reflection, it is possible to observe that there might not have been such an uproar in the newspapers a year ago, if newsprint had increased their prices more often—as other industries have done.

For the future, Canadian mills are faced with further cost increases. For example, mills in Eastern Canada signed a two-year contract last year which will mean a 5% boost in wages this spring or about $1 per ton. Mills are faced with rising wood costs, perhaps in the order of $2 per ton. These two items alone may mean a $3 increase per ton this year.

The only solution to the newsprint price problem in Canada is to find a means of halting spiraling costs. This is true in other business, too. This has reached a point where wise leaders are deeply concerned.

## Pulpwood Man's Reward

The old man reached the Pearly Gate,
his head was bent and low.
He meekly asked the Man of Fate
the way that he should go.

"What have you done," St. Peter said,
"That I should let you in?"
For he saw the old man raise his head
as he glimpsed what lay within.

"Oh, some on earth can prove their worth,
"and some are of the blood,
"but most can only do their best,
"like me—I dealt in pulpwood."

"Not pulpwood!!!"—Peter gasped aloud,
and quickly pressed the bell.
"Come right inside and choose your harp.
"You've had your share of Hell!"

—from Swedish Pappersmassetidning.

## Good News for Pulp and Paper—

There are more 3- and 4-children families in America today than there have been in a generation.

This should mean a continued expansion of business to meet their needs.

In 20 years there will be 18,500,000 more households in the United States, according to forecasts.

If pulp and paper merely maintain their present markets, that means a lot more pulp and paper will be needed.

Hollow club used
in old Chinese theatrical productions,
with the Yang-Yin symbol cut out
on all four sides.

This symbol (Yang-Yin) represents T'ai-chi, the old Chinese *Ultimate Principle*, and as such, *perfection*. As the Asten-Hill trademark it symbolizes *perfection* in paper mill DRYER FELTS.

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